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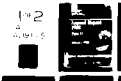

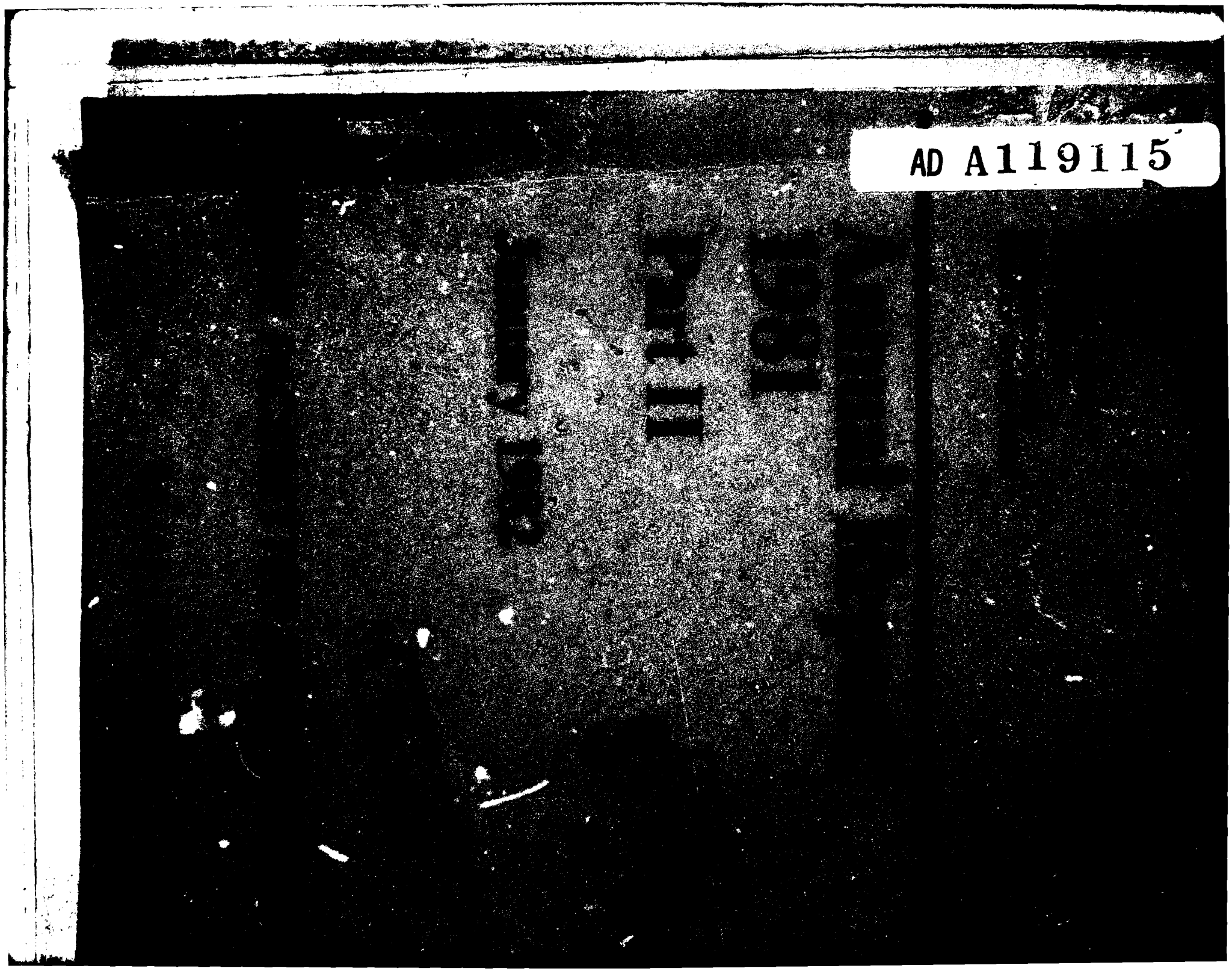

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Water control manuals
Water quality activities
Sediment activities
Cooperative programs

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report presents detailed summaries of reservoir conditions, water quality activities and coordinating activities with other Federal and non-federal basin interests groups.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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PART I

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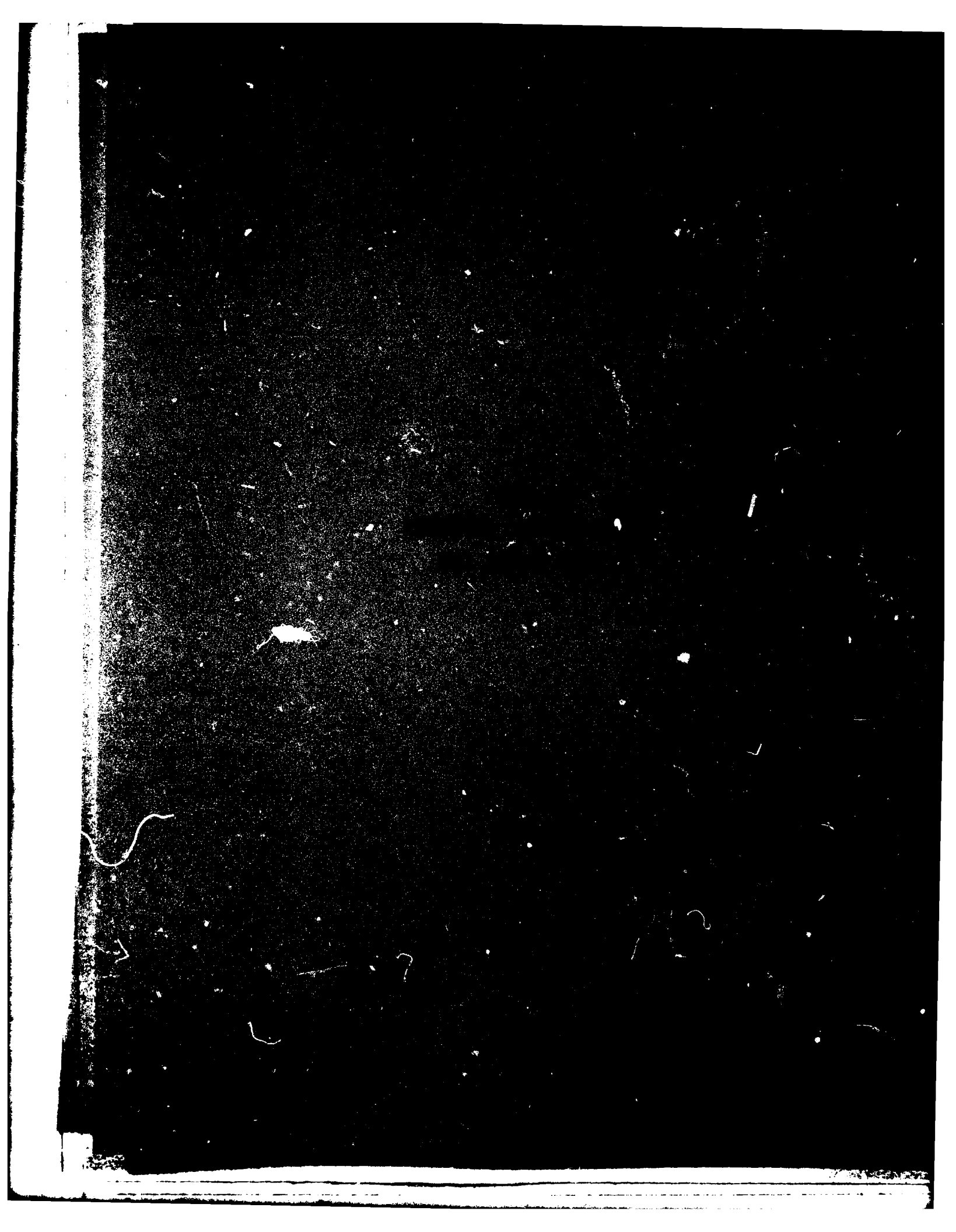
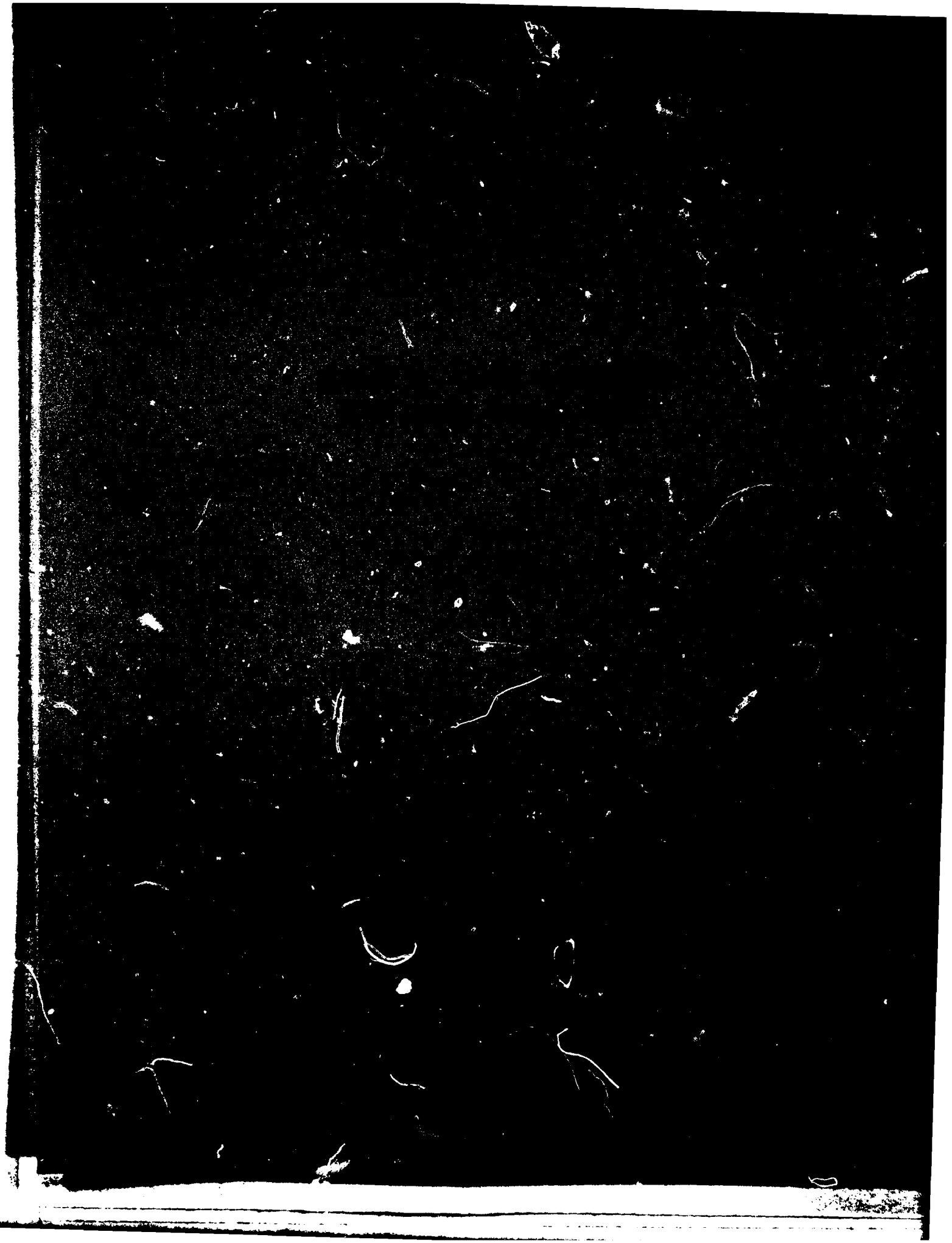




STATUS OF WATER CONTROL MANUALS IN SWD
(Report Control Symbol DAEN-CWE-16) Revised: 1 January 1982

RESERVOIR	STREAM	OWNER	DIST	WATER CONTROL MANUAL SUBMITTED	SCHEDULED THRU FY 84	APPROVED
White Riv Master		CE	LRD	Dec 54 F		Dec 55 OCE
Beaver	White Riv Basin	CE	LRD	Oct 66 F		Jan 67 OCE
Table Rock	White Riv Basin	CE	LRD	Oct 66 F		Jan 67 OCE
Bull Shoals	White Riv Basin	CE	LRD	Oct 66 F		Jan 67 OCE
Norfork	White Riv Basin	CE	LRD	Oct 66 F		Jan 67 OCE
Clearwater	Black River	CE	LRD	Jan 73 U	Jun 82 R	Feb 73 SWD R*
Greers Ferry	Little Red River	CE	LRD	Oct 65 F		Jun 66 OCE
Arkansas Master		CE	AD	Apr 69 F		Jun 70 OCE
Pueblo (1)	Arkansas River	BR	AD	Dec 77 F		Feb 79 SWD
Trinidad	Purgatorie River	CE	AD	Jul 78 F		Oct 79 SWD
John Martin	Arkansas River	CE	AD	Jun 59 F	Mar 82 R	Feb 60 OCE
Arkansas Master		CE	TD	Apr 76 U		Sep 80 SWD
Cheney (1)	N. F. Ninnescah	BR	TD	Oct 65	Jun 84 R	Mar 66 OCE AR
El Dorado	Walnut River	CE	TD	Feb 81	Dec 81	Sep 81 SWD R*
Kaw	Arkansas River	CE	TD	Dec 77 F		Jan 78 SWD
Great Salt Plains	Salt Fork Ark	CE	TD	Nov 66 F		Apr 67 OCE
Keystone	Arkansas River	CE	TD	Nov 63	Sep 84 R	Apr 65 OCE
Heyburn	Polecat Creek	CE	TD	Jan 57	Dec 82 R	Feb 62 OCE AR
Verdigris System						
Toronto	Verdigris River	CE	TD	Jun 66 F	May 84 R	Aug 66 OCE
Fall River	Fall River	CE	TD	Jun 66 F		Aug 66 OCE
Elk City	Elk River	CE	TD	Jun 66 F		Aug 66 OCE
Big Hill	Big Hill Creek	CE	TD		Feb 82	
Oologah	Verdigris River	CE	TD	Dec 75 U		Jan 76 SWD AR
Hulah	Caney River	CE	TD	Oct 68		Jun 69 OCE AR
Copan	Caney River	CE	TD		Jul 81	
Birch	Bird Creek	CE	TD	Aug 81 F		Sep 81 SWD
Skiatook	Horning Creek	CE	TD		Aug 84	

STATUS OF WATER CONTROL MANUALS IN SWD

RESERVOIR	STREAM	OWNER	DIST	WATER CONTROL MANUAL SUBMITTED	SCHEDULED THRU FY 84	APPROVED
Upper Grand Sys						
Council Grove	Neosho River	CE	TD	Apr 74 F		May 74 SWD
Marion	Cottonwood River	CE	TD	Jul 74 F		Aug 74 SWD
John Redmond	Neosho River	CE	TD	Sep 76 R		
Pensacola (1)	Neosho River	GRDA	TD	Sep 64	Jul 83 R	Mar 65 OCE AR
Markham Ferry (1)	Neosho River	GRDA	TD	Sep 64	Feb 84 R	Mar 65 OCE AR
Fort Gibson	Neosho River	CE	TD	Sep 64	Feb 85 R	Mar 65 OCE AR
Tenkiller Ferry	Illinois River	CE	TD	Jul 76		Mar 77 SWD
Conchas	Canadian River	CE	AD	Jun 67 F		Jan 68 OCE
Sanford (1)	Canadian River	BR	TD	Sep 65	Nov 83 U	Feb 66 OCE AR
Norman (1)	Little River	BR	TD	Feb 65 F		Nov 65 OCE
Optima	N. Canadian River	CE	TD	Dec 69		Feb 70 SWD AR
Fort Supply	Wolf Creek	CE	TD	Dec 69		Feb 70 SWD AR
Canton	N. Canadian River	CE	TD	Dec 69		Feb 70 SWD AR
Arcadia	Deep Fork River	CE	TD		Dec 84	
Eufaula	Canadian River	CE	TD	Sep 62 F		Nov 63 OCE
Newt Graham PT VI, L&D 18	Arkansas River	CE	TD	Apr 72 F		Jun 72 SWD
Chouteau PT V, L&D 17	Arkansas River	CE	TD	Apr 72 F		Jun 72 SWD
Webbers Falls PT IV, L&D 16	Arkansas River	CE	TD	Jul 72 F		Jul 72 SWD
R. S. Kerr PT III, L&D 15	Arkansas River	CE	TD	Apr 72 F		Apr 72 SWD
W. D. Mayo PT II, L&D 14	Arkansas River	CE	TD	Oct 72		Jan 73 SWD AR
Wister	Poteau River	CE	TD	Mar 74 F		Jun 74 SWD
Blue Mountain	Petit Jean	CE	LRD	Feb 68 F	Jan 84 R	Mar 68 OCE
Nimrod	Fourche La Fave	CE	LRD	Sep 67 F		Mar 68 OCE
Lock & Dam 13	Arkansas River	CE	LRD	Sep 74 F		Sep 74 SWD
Ozark-Jeta Taylor	Arkansas River	CE	LRD	Sep 74 F		Sep 74 SWD
Dardanelle	Arkansas River	CE	LRD	Mar 76 F		Apr 76 SWD
Lock & Dam 9	Arkansas River	CE	LRD	Mar 76 F		Apr 76 SWD
Lock & Dam 8 Toad Suck Ferry	Arkansas River	CE	LRD	Jul 74 F		Sep 74 SWD
Lock & Dam 7 Murray	Arkansas River	CE	LRD	Jul 74 F		Sep 74 SWD
Lock & Dam 6 David D. Terry	Arkansas River	CE	LRD	Oct 71 F		Sep 74 SWD

STATUS OF WATER CONTROL MANUALS IN SWD

RESERVOIR	STREAM	OWNER	DIST	WATER CONTROL MANUAL SUBMITTED	SCHEDULED THRU FY 84	APPROVED
Lock & Dam 5	Arkansas River	CE	LRD	Oct 71 F		Sep 74 SWD
Lock & Dam 4	Arkansas River	CE	LRD	Oct 71 F		Sep 74 SWD
Lock & Dam 3	Arkansas River	CE	LRD	Oct 71 F		Sep 74 SWD
Lock & Dam 2	Arkansas River	CE	LRD	Oct 71 F		Sep 74 SWD
Red River Master		CE	TD	Nov 62	Jun 85 R	Feb 63 OCE AR
Altus (1)	N. Fork Red	BR	TD	Dec 67 F		Oct 68 OCE
Mountain Park (1)	Otter Creek	BR	TD	Jan 76	Jun 83 R	Mar 76 SWD R*
Lake Kemp (1)	Wichita River	WCID	TD	May 73		Jun 73 SWD
Waurika	Beaver Creek	CE	TD	Apr 77		Apr 77 SWD
Foss (1)	Wachita River	BR	TD	Feb 61 F		May 61 OCE
Fort Cobb (1)	Cobb Creek	BR	TD	Jan 60 F		Mar 61 OCE
Arbuckle (1)	Rock Creek	BR	TD	Nov 66		Sep 67 OCE AR
Texoma	Red River	CE	TD	Jun 75	Jan 83 R	Nov 75 SWD R*
Pat Mayse	Sanders Creek	CE	TD	Dec 66 F		Oct 67 OCE
Clayton	Jackfork Creek	CE	TD	Nov 80	Apr 82	
McGee Creek (1)	Muddy Boggy Creek	BR	TD		Apr 84	
Hugo	Kiamichi River	CE	TD		Feb 82	Mar 81 SWD R*
Little Riv Sys						
Pine Creek	Little River	CE	TD	May 74 R		Jul 74 SWD AR
Broken Bow	Mountain Fork	CE	TD	Jul 74 R		Nov 74 SWD
DeQueen	Rolling Fork	CE	LRD	May 76 F		Jun 76 SWD R
Gillham	Cossatot River	CE	LRD	Mar 67	May 82 R	Apr 81 SWD R*
Dierks	Saline River	CE	LRD	Jun 75		Apr 76 SWD
Millwood	Little River	CE	TD	Sep 73 F		Nov 73 SWD
Sulphur Riv Master						
Cooper	Sulphur River	CE	FWD			
Wright Patman	Sulphur River	CE	FWD	Sep 74 U	Dec 82 R	Nov 74 LMVD
Lake O' The Pines	Cypress Creek	CE	FWD	Jun 74 U	Dec 83 R	Nov 74 LMVD
Neches Riv Master		CE	FWD	May 62	Apr 84 R	Mar 63 OCE AR
B. A. Steinhagen	Neches River	CE	FWD	Jul 51	Aug 83 R	Feb 63 OCE AR
Sam Rayburn	Angelina River	CE	FWD	Jan 73 R	Feb 82 R	Feb 73 SWD AR
Trinity Riv Master		CE	FWD	May 75 P	Sep 83	May 75 SWD
Benbrook	Clear Fork	CE	FWD	May 75 P		May 75 SWD
Lewisville	Elm Fork	CE	FWD	May 75 P	May 84	May 75 SWD

STATUS OF WATER CONTROL MANUALS IN SWD

RESERVOIR	STREAM	OWNER	DIST	WATER CONTROL MANUAL SUBMITTED	SCHEDULED THRU FY 84	APPROVED
Grapevine	Denton Creek	CE	FWD	May 75 P	Apr 84	May 75 SWD
Lavon	East Fork	CE	FWD	May 75 P		May 75 SWD
Navarro Mills	Richland Creek	CE	FWD	May 63		Jul 64 OCE AR
Bardwell	Waxahachie Creek	CE	FWD	Aug 63		Jul 65 OCE AR
Wallisville	Trinity River	CE	GD	(Work on project stopped)		
Buffalo Bayou Master		CE	GD			
Barker	Buffalo Bayou	CE	GD	May 63 F		Oct 72 SWD R
Addicks	Buffalo Bayou	CE	GD	May 63 F		Oct 72 SWD R
Brazos Riv Master		CE	FWD	Jan 73		Mar 73 SWD R*
Whitney	Brazos River	CE	FWD	Jan 74 F	Feb 84 U	Apr 75 SWD
Aquilla	Aquilla Creek	CE	FWD		Jan 83	
Proctor	Leon River	CE	FWD	Feb 74 F		Apr 74 SWD
Belton	Leon River	CE	FWD	Apr 76 F		May 76 SWD
Stillhouse Hollow	Lampasas River	CE	FWD	May 76 F		Jul 76 SWD
Georgetown	N. F. San Gabriel	CE	FWD	Dec 79 P	Aug 82	Jun 80 SWD R
Granger	San Gabriel	CE	FWD	Jan 80 P	Mar 82	Sep 80 SWD R
Waco	Bosque River	CE	FWD	Jul 73 F	Sep 84 U	Aug 73 SWD
Somerville	Yegua Creek	CE	FWD	Oct 73 F		Nov 73 SWD
Colorado Riv Master		CE	FWD			
Hords Creek	Hords Creek	CE	FWD	Sep 55	Sep 84 R	May 62 OCE AR
O. C. Fisher	N. Concho	CE	FWD	Jan 56	Feb 83 R	Dec 62 OCE AR
Twin Buttes (1)	S. Concho	BR	FWD	Jan 66 P	Dec 83	Sep 66 FR
Marshall Ford (1)	Colorado River	BR	FWD	Dec 79		May 80 SWD R/FR
Guadalupe Riv Master		CE	FWD	Oct 63		Jan 66 OCE AR
Canyon	Guadalupe River	CE	FWD	Mar 73		May 73 SWD
Rio Grande Master		CE	AD	Aug 66 F		Feb 67 OCE
Abiquiu	Rio Chama	CE	AD	Feb 68		May 81 SWD R
Galisteo	Galisteo Creek	CE	AD	Mar 68 F		Apr 68 OCE
Cochiti	Rio Grande	CE	AD	Aug 78		Jun 81 SWD

STATUS OF WATER CONTROL MANUALS IN SWD

RESERVOIR	STREAM	OWNER	DIST	WATER CONTROL MANUAL SUBMITTED	SCHEDULED THRU FY 84	APPROVED
Jemez Canyon	Jemez River	CE	AD	Aug 66 F	Aug 82 U	Feb 67 OCE
Platoro (1)	Conjos River	BR	AD	Apr 64 F		May 64 OCE
Pecos Riv Master		CE	AD	Nov 77		Nov 77 SWD AR
Santa Rosa	Pecos River	CE	AD	Dec 79		Sep 81 SWD
Sumner (1)	Pecos River	BR	AD		Jul 82	
Two Rivers	Rio Hondo	CE	AD	Jun 62 F		Jun 64 OCE

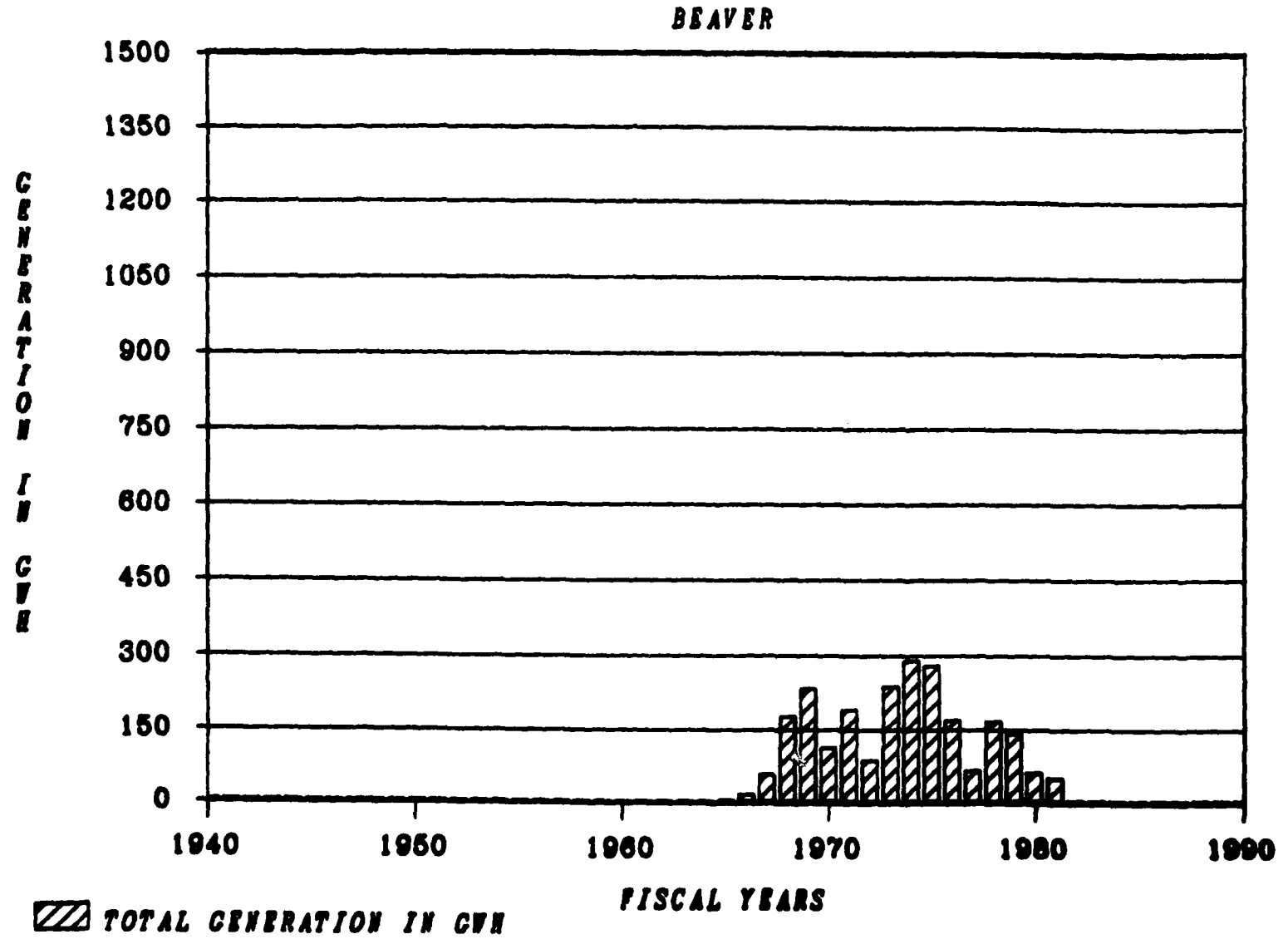
Note:
(1) = Section 7 project, flood control regulation by CE.
AR = Approved, comments to be answered.
F = Complete, comments have been answered and approved.
FR = Published in Federal Register.
P = Plan.
R = Revision or answer to comments.
R* = Returned without approval.
U = Update of existing approved manual.
GRDA = Grand River Dam Authority.
WCID = Wichita County Water Improvement District.
LCRA = Lower Colorado River Authority.
BR = Bureau of Reclamation.

SECTION V - REGULATION OF MULTI-PURPOSE PROJECTS WITH HYDROPOWER

HYDROPOWER GENERATION
AT
SOUTHWESTERN DIVISION PROJECTS

The 17 hydropower projects are listed in the following table. Generation by the projects, since impoundment, is shown on the graphs following the table in the order in which they are listed.

Project	Basin	Stream	No. Units	Total Capacity MW	Plate No.
Beaver	White	White	2	112	1
Table Rock	White	White	4	200	2
Bull Shoals	White	White	8	340	3
Norfork	White	North Fork	2	70	4
Greers Ferry	White	Little Red	2	96	5
Keystone	Arkansas	Arkansas	2	70	6
Ft. Gibson	Arkansas	Grand	4	45	7
Webbers Falls	Arkansas	Arkansas	3	60	8
Tenkiller Ferry	Arkansas	Illinois	2	34	9
Eufaula	Arkansas	S. Canadian	3	90	10
R.S. Kerr	Arkansas	Arkansas	4	110	11
Ozark-Jeta Taylor	Arkansas	Arkansas	5	100	12
Dardanelle	Arkansas	Arkansas	4	124	13
Denison	Red	Red	2	70	14
Broken Bow	Red	Mountain Fork	2	100	15
Sam Rayburn	Neches	Angelina	2	52	16
Whitney	Brazos	Brazos	2	30	17


BEAVER
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1350
1200
1050
900
750
600
450
300
150
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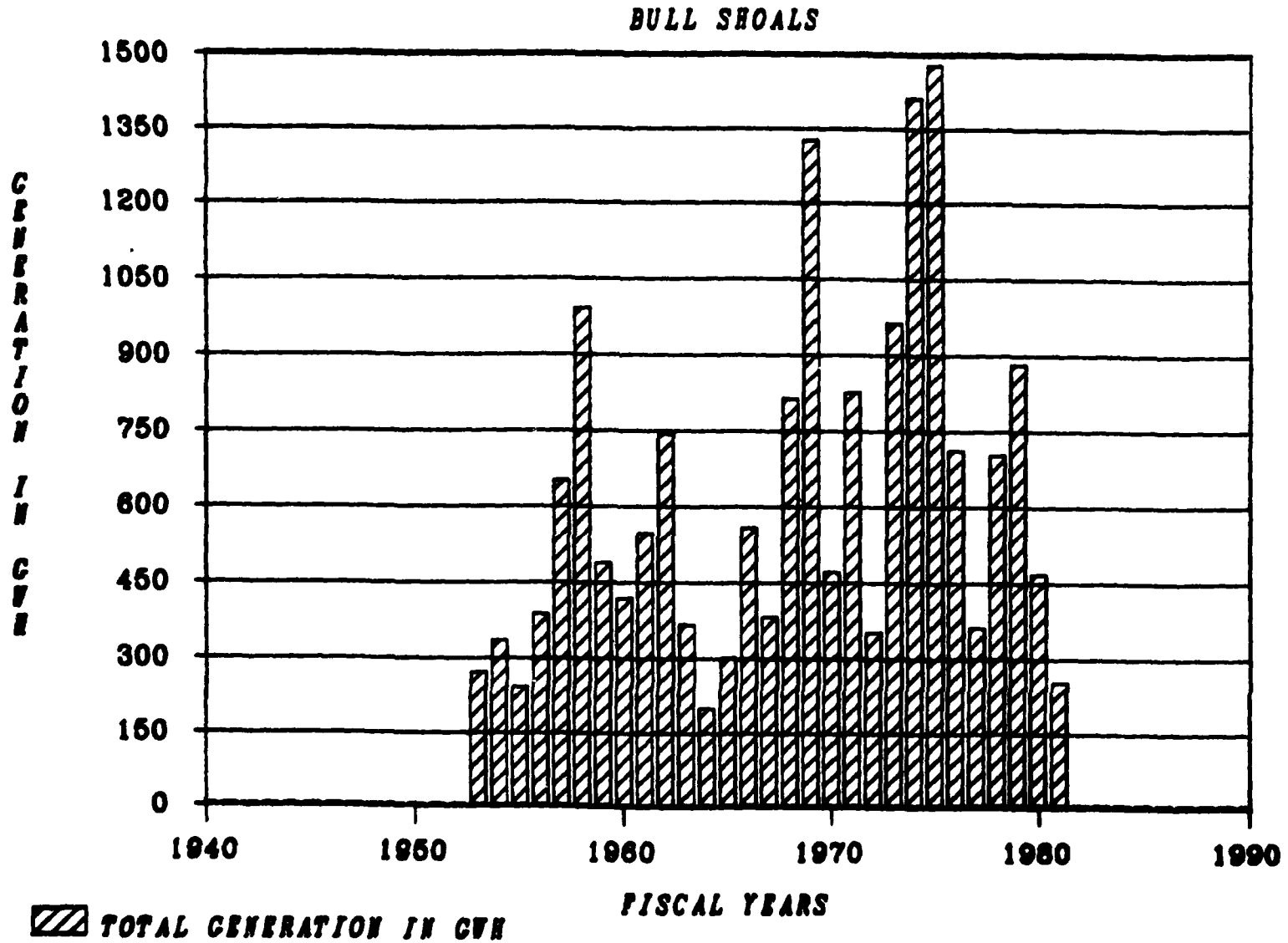
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 1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1050
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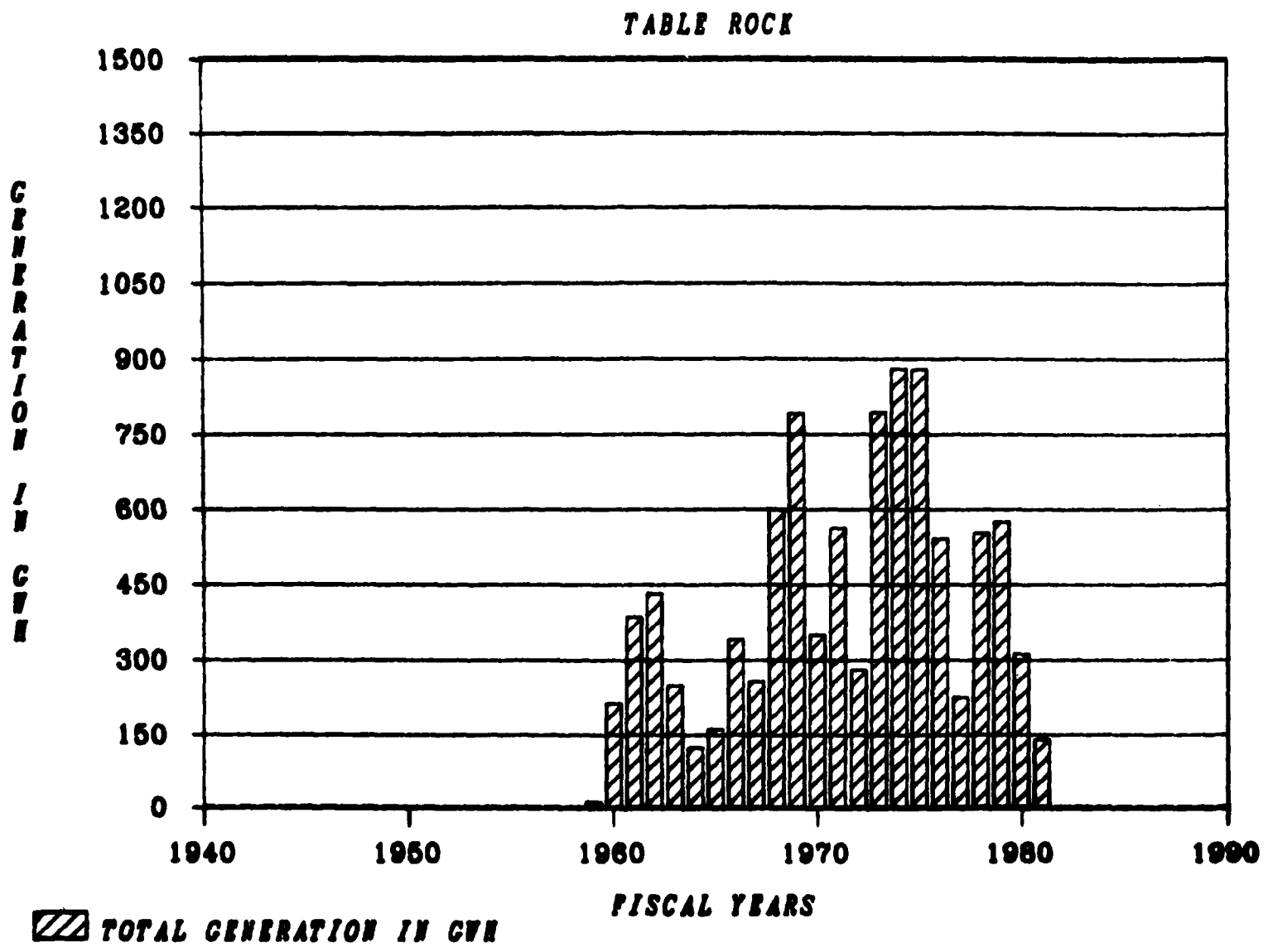
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 3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900
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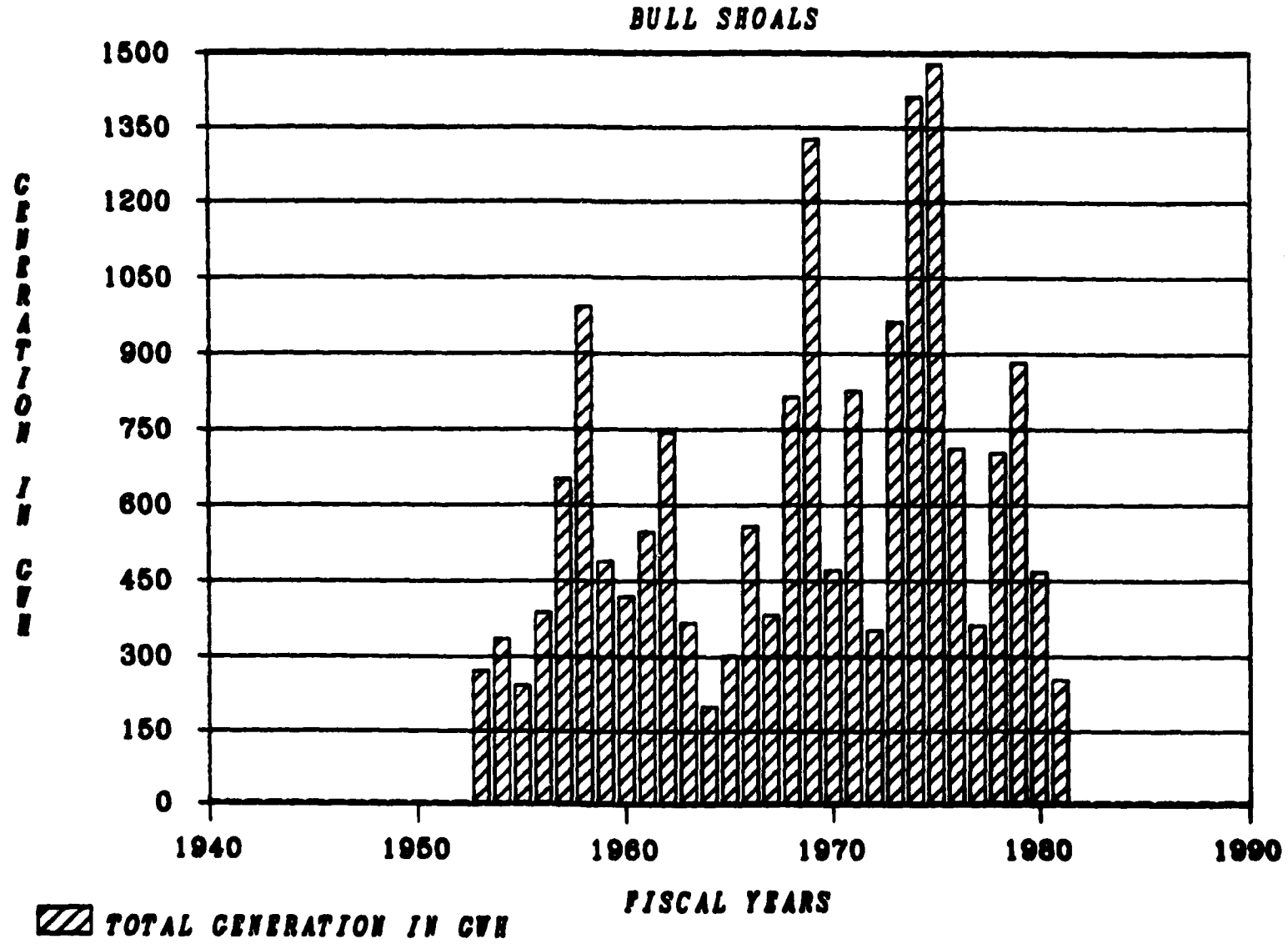
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 2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1200
1050
900
750
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150
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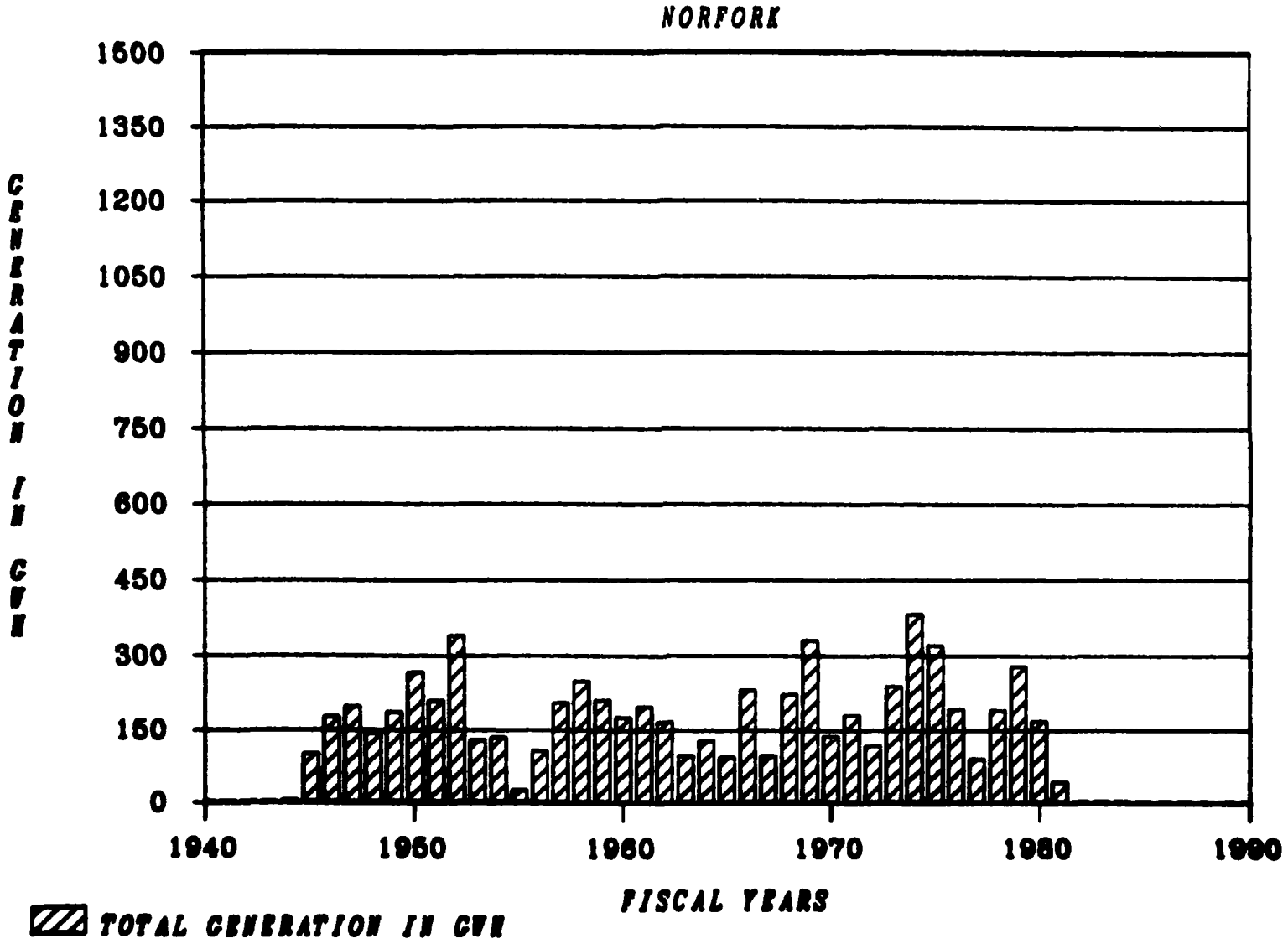
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 3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GENERATION IN GWH
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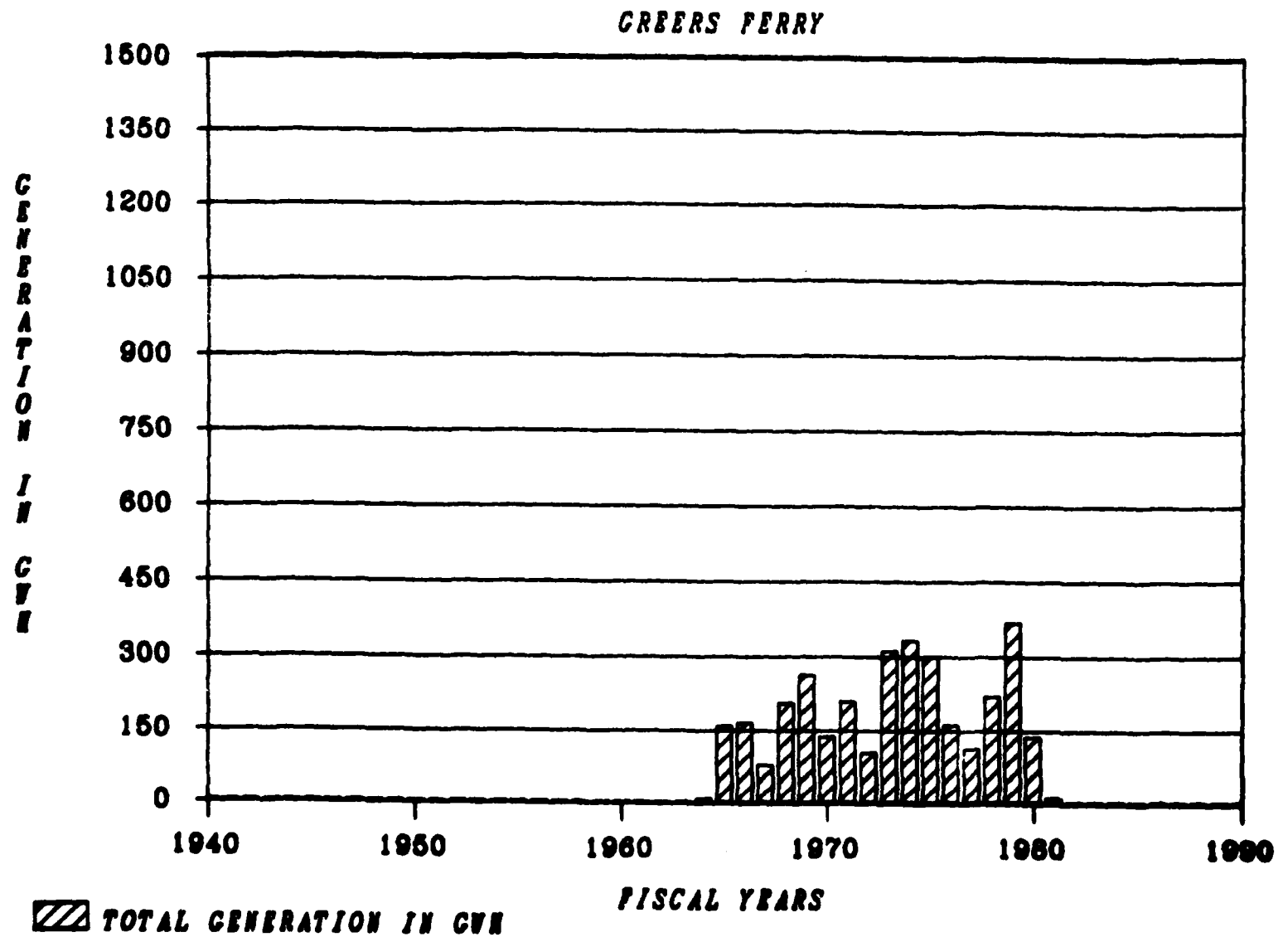
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 4


CREERS FERRY
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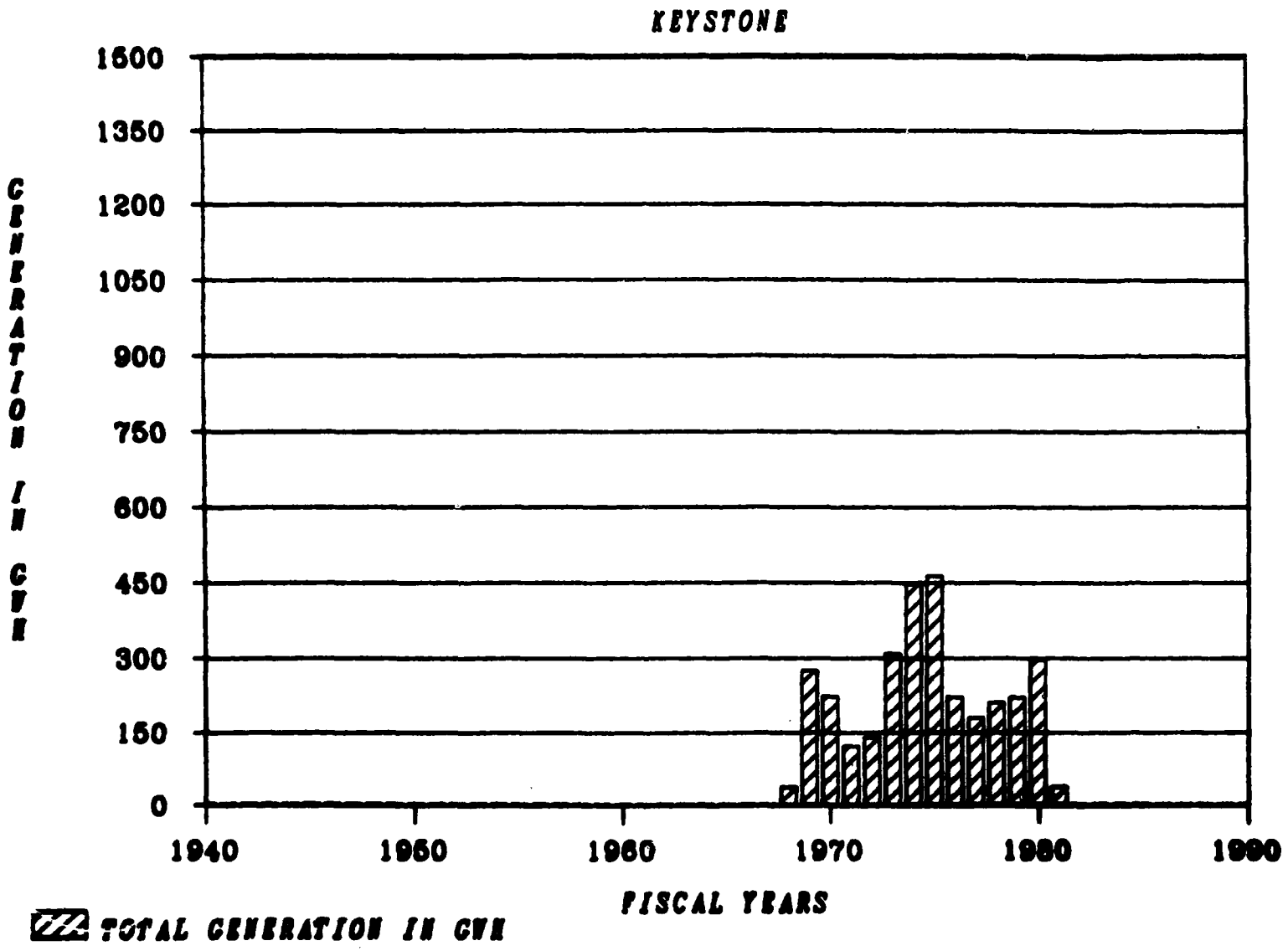
1200
1050
900
750
600
450
300
150
0
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 5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GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

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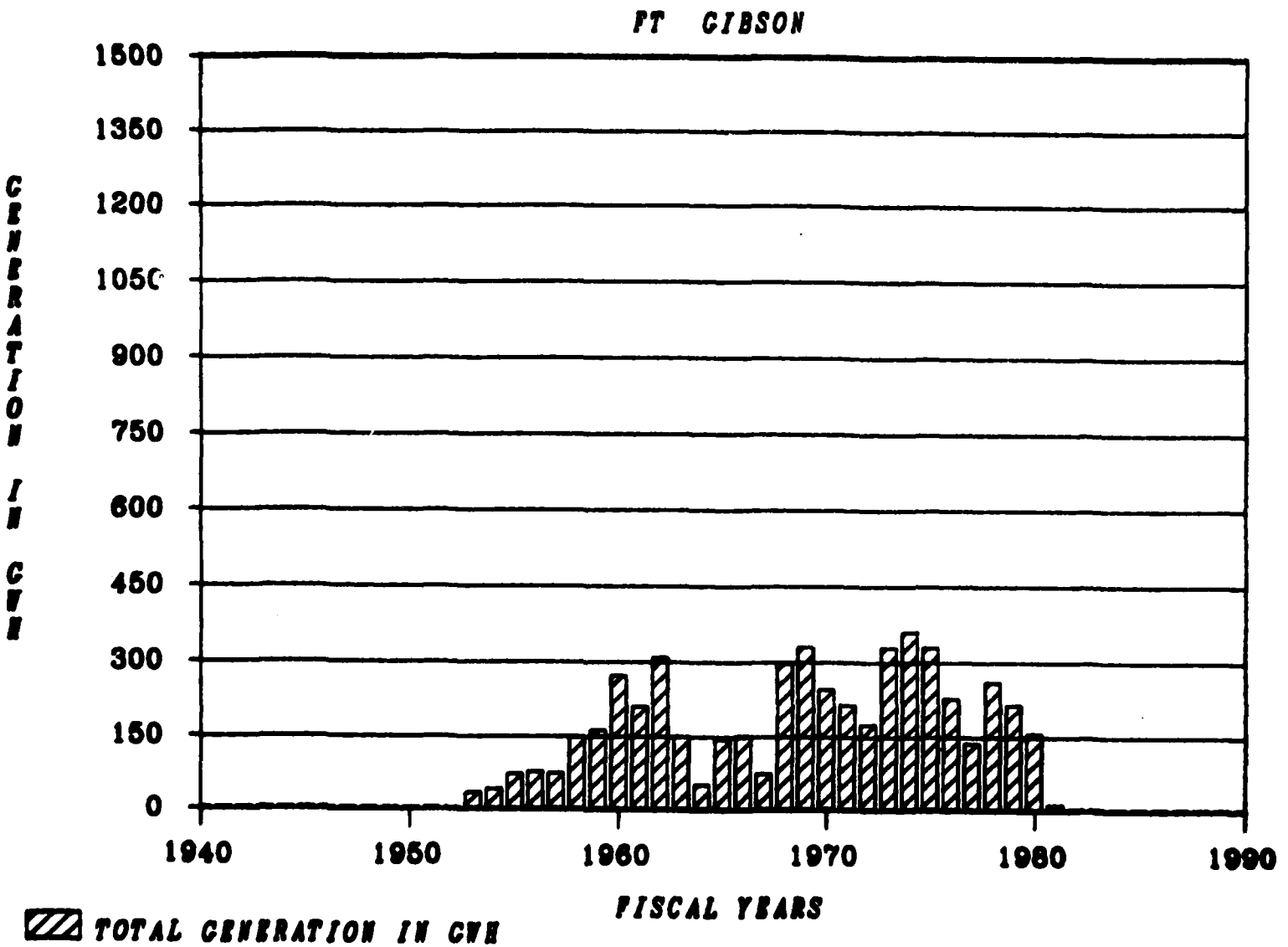
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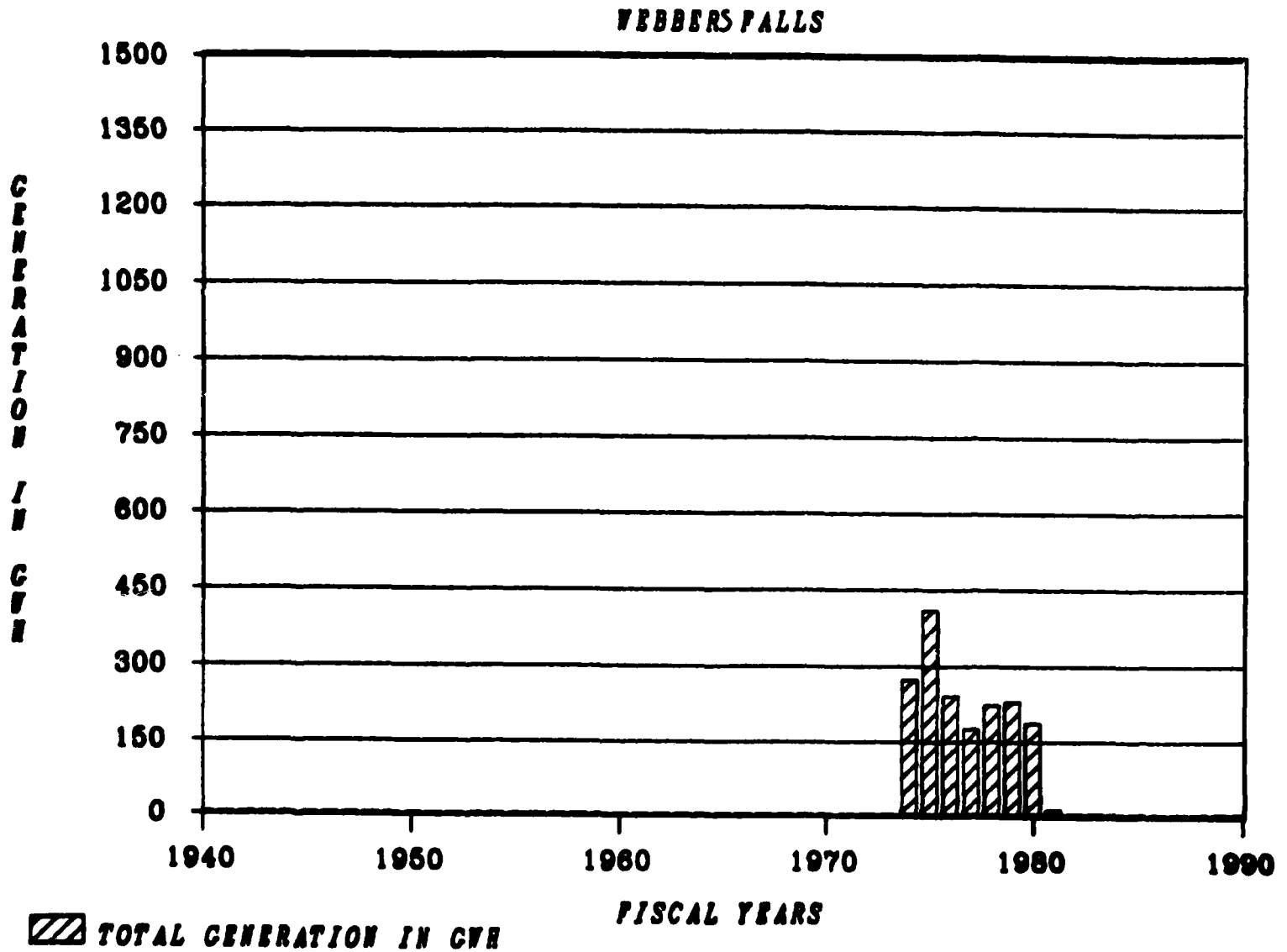
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 7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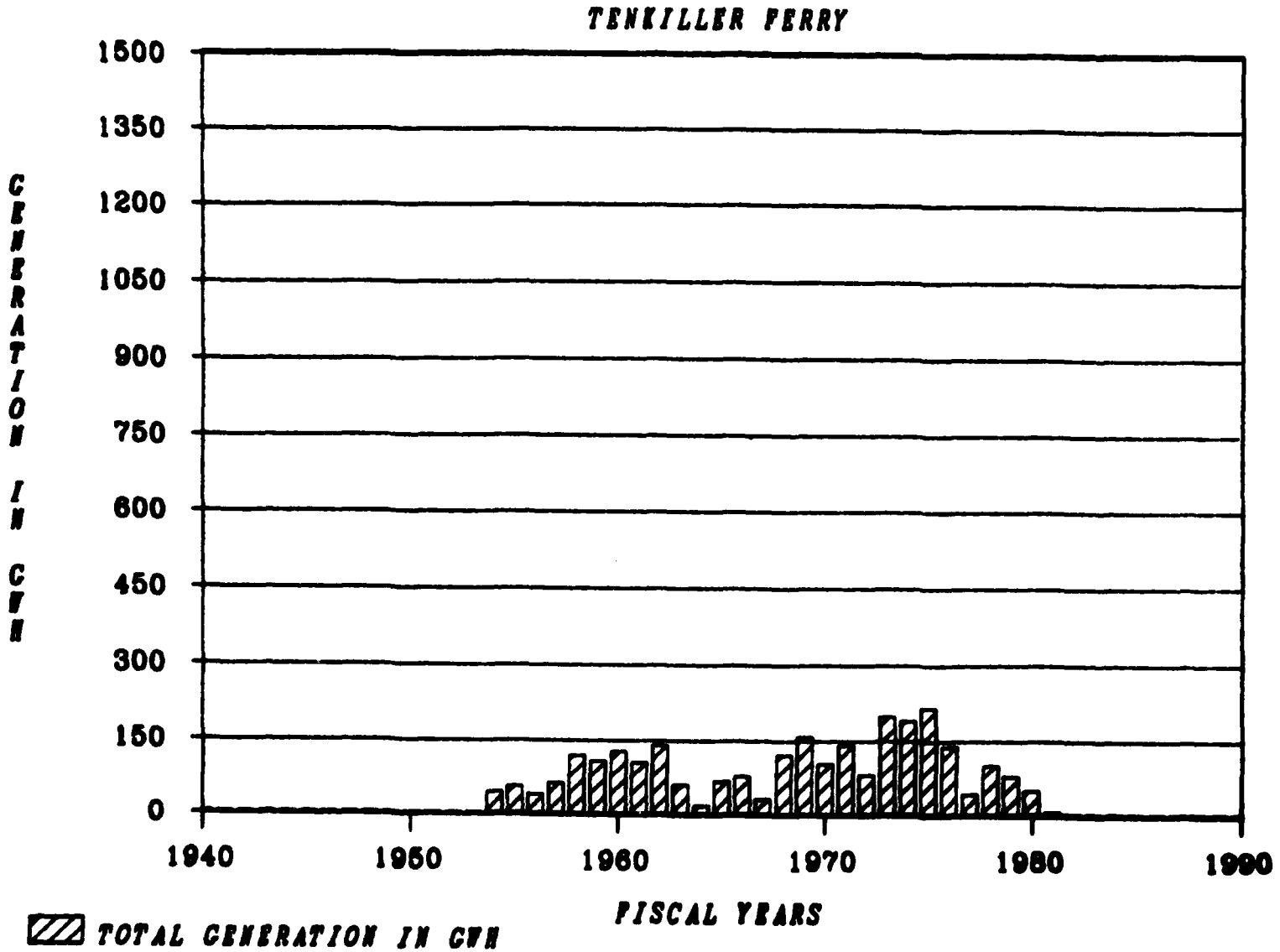
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 8


TENKILLER FERRY
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1200
1050
900
750
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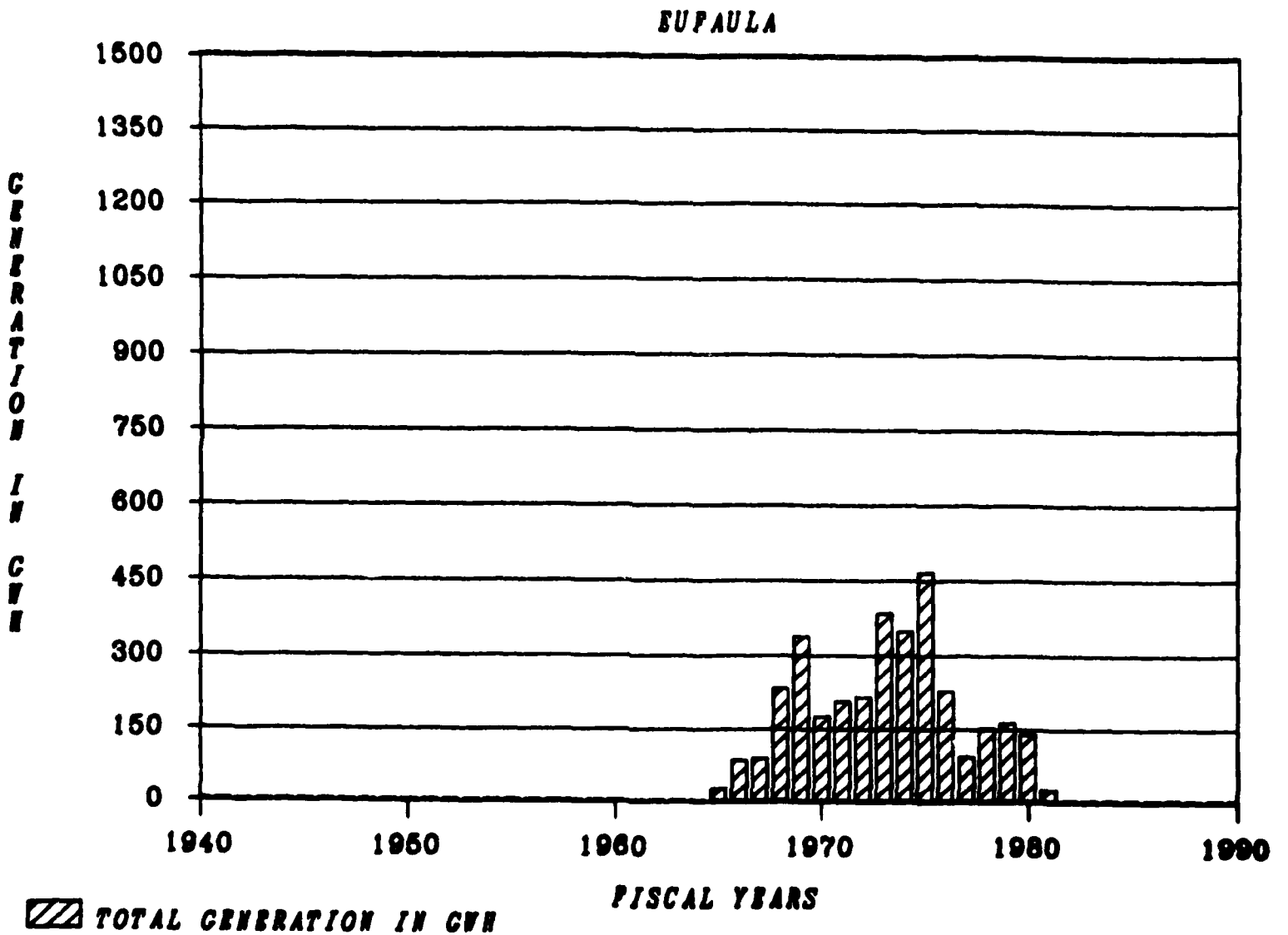
450
300
150
0
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 9


EUPAULA
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1200
1050
900
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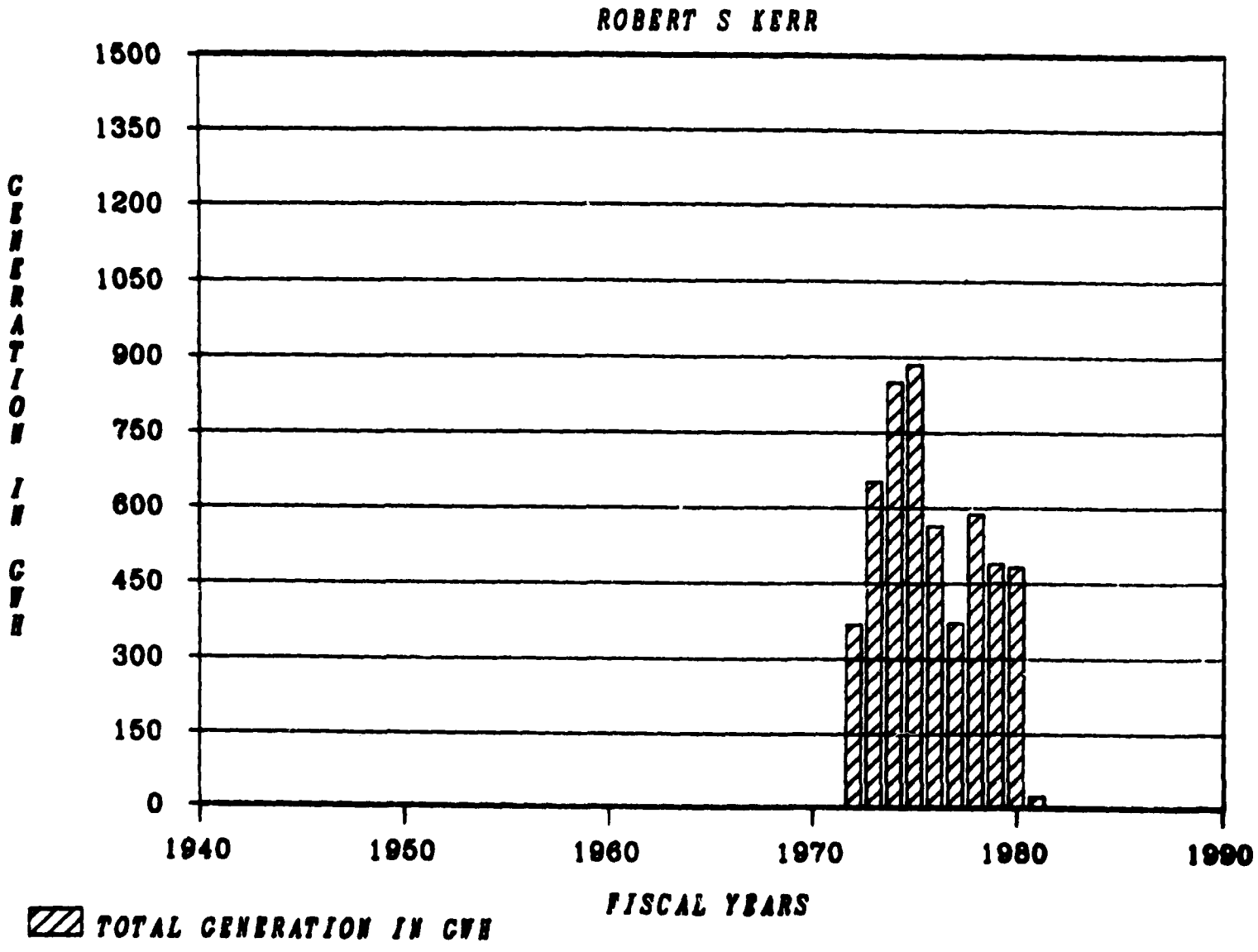
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 10


ROBERT S KERR
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1350
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1050
900
750
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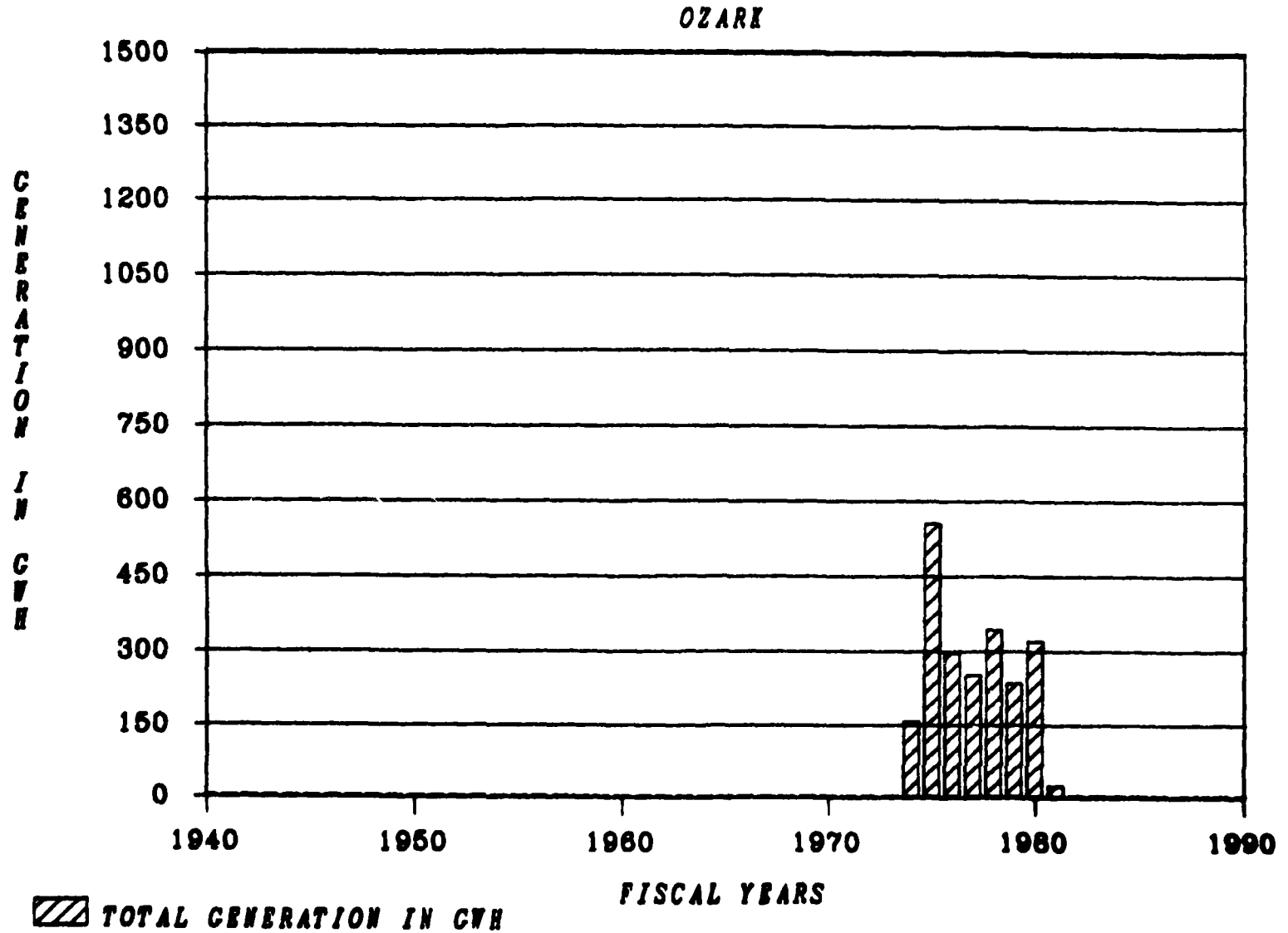
0
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 11


OZARK
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1200
1050
900
750
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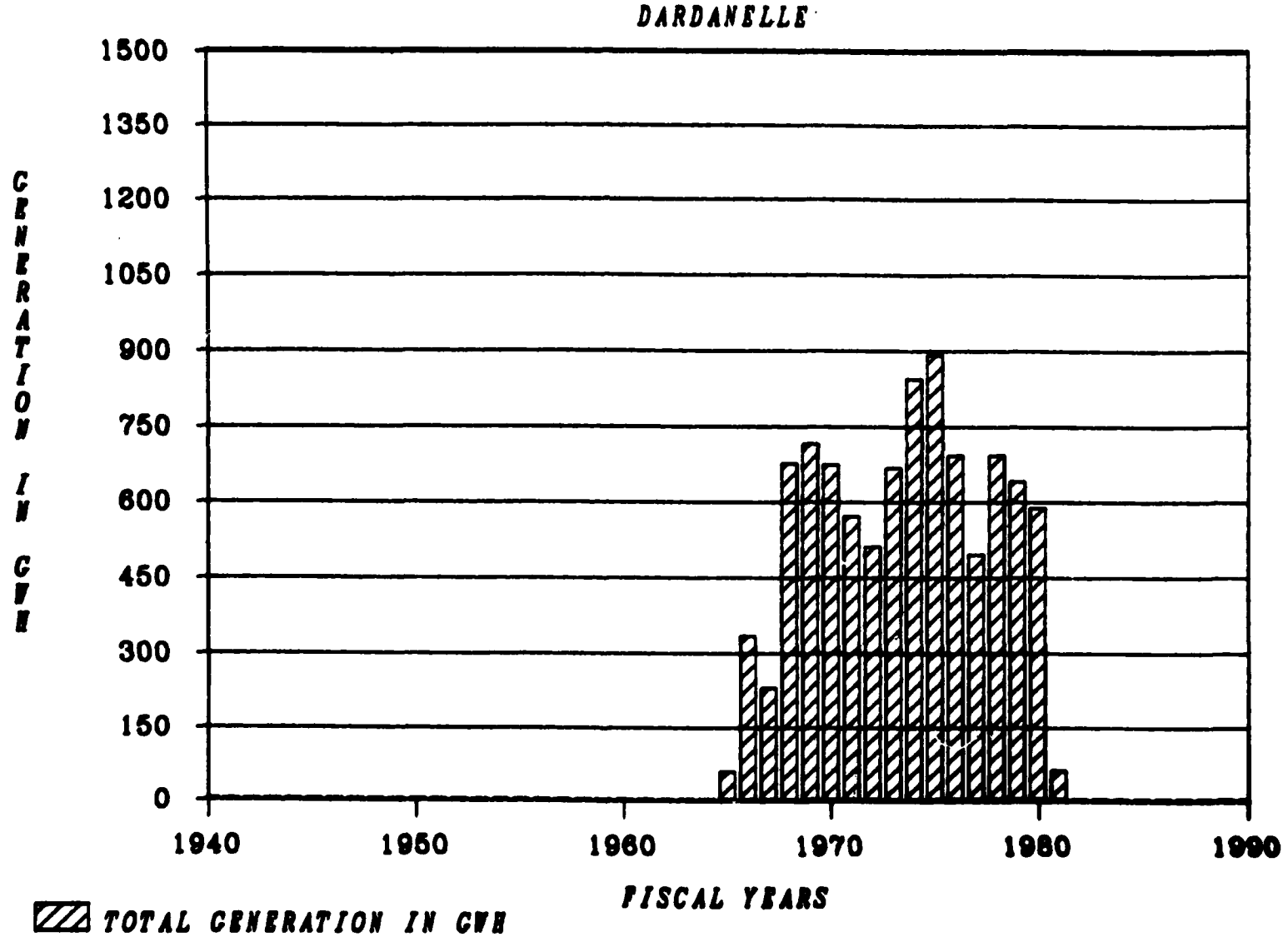
450
300
150
0
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 12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1350
1200
1050
900
750
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300
150
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GENERATION IN GWH
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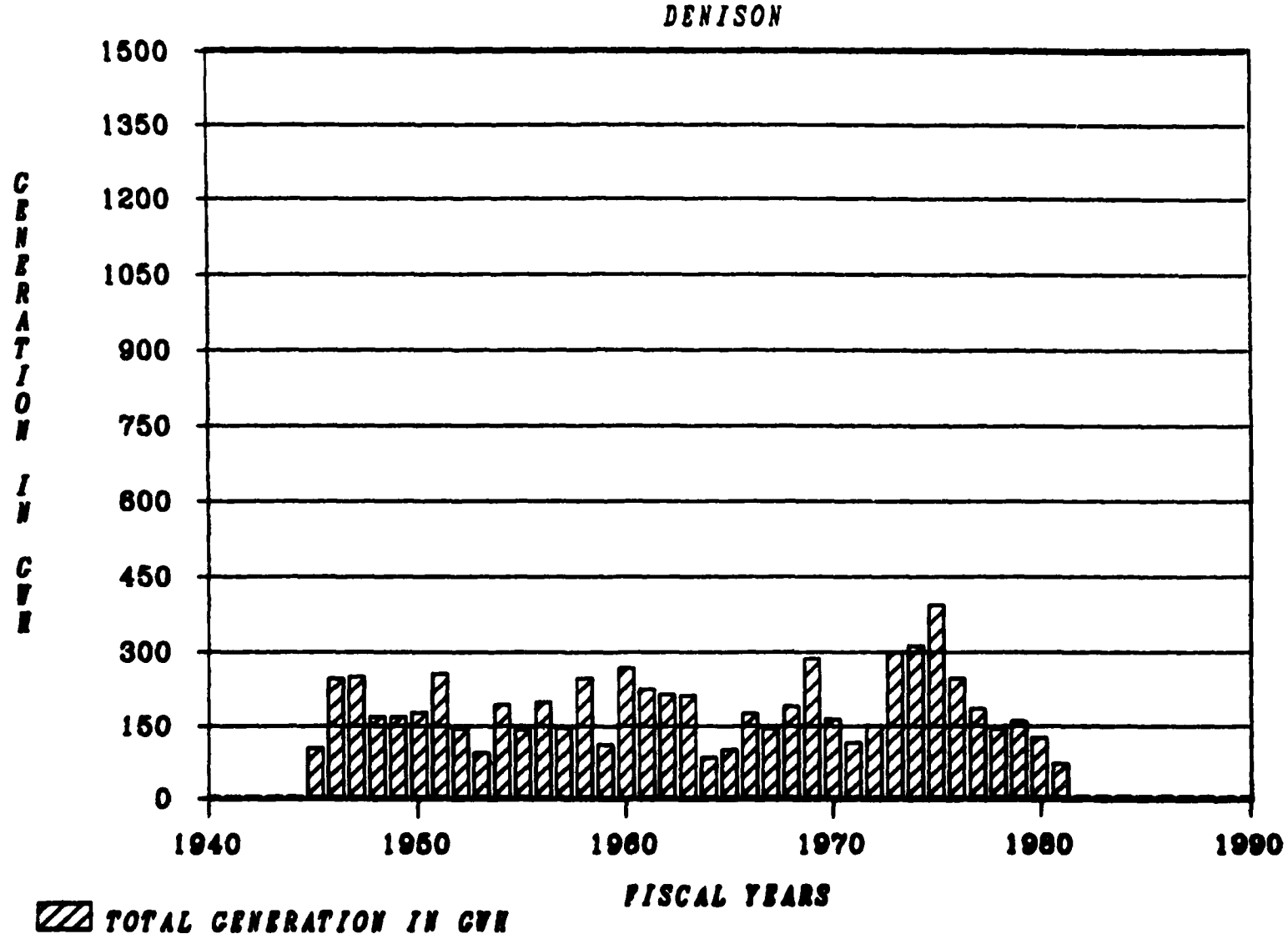
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 13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1050
900
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GENERATION IN GWH
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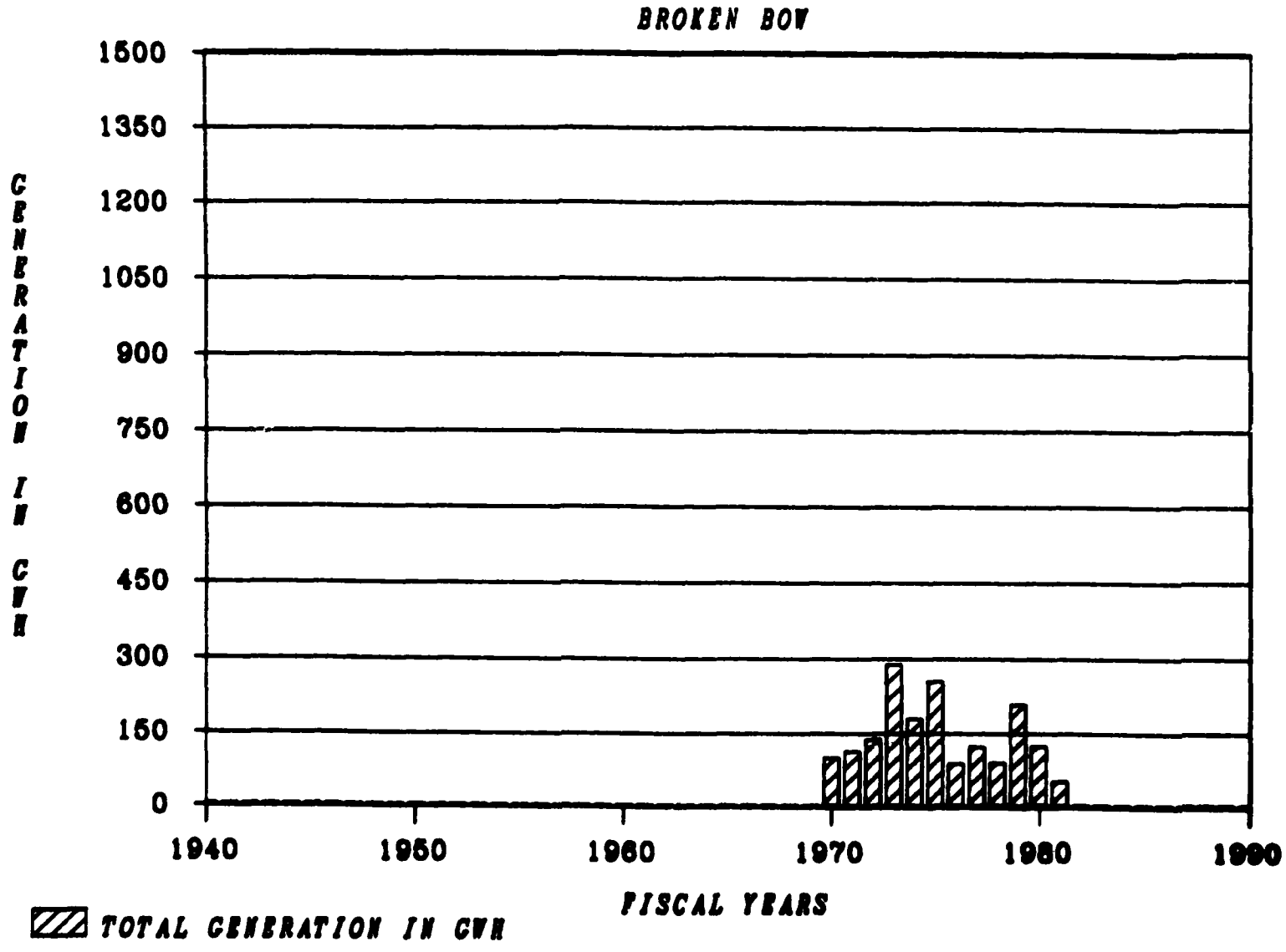
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 14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1200
1050
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300
150
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GENERATION IN GWH
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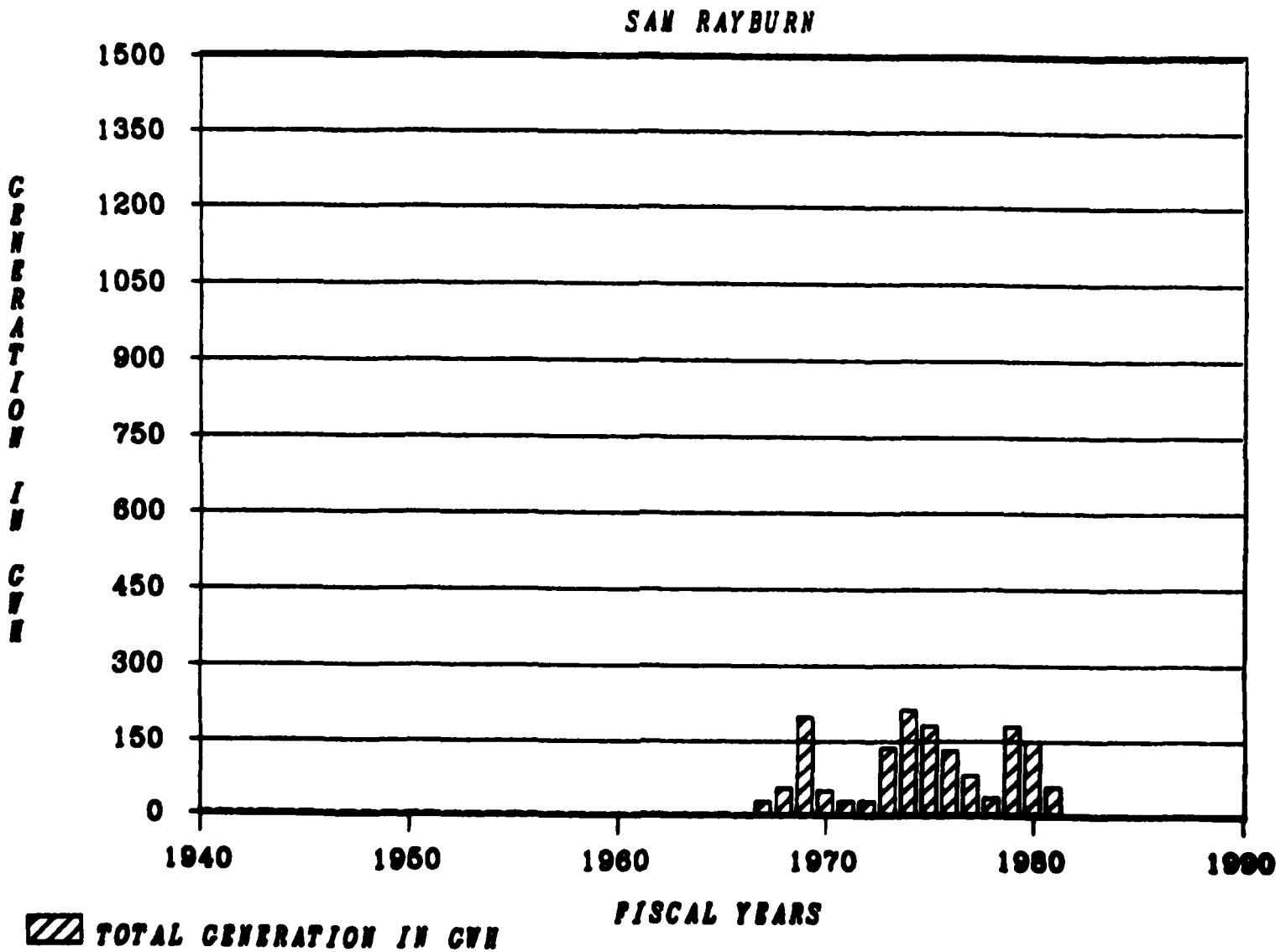
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 15


SAM RAYBURN
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1350
1200
1050
900
750
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450
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150
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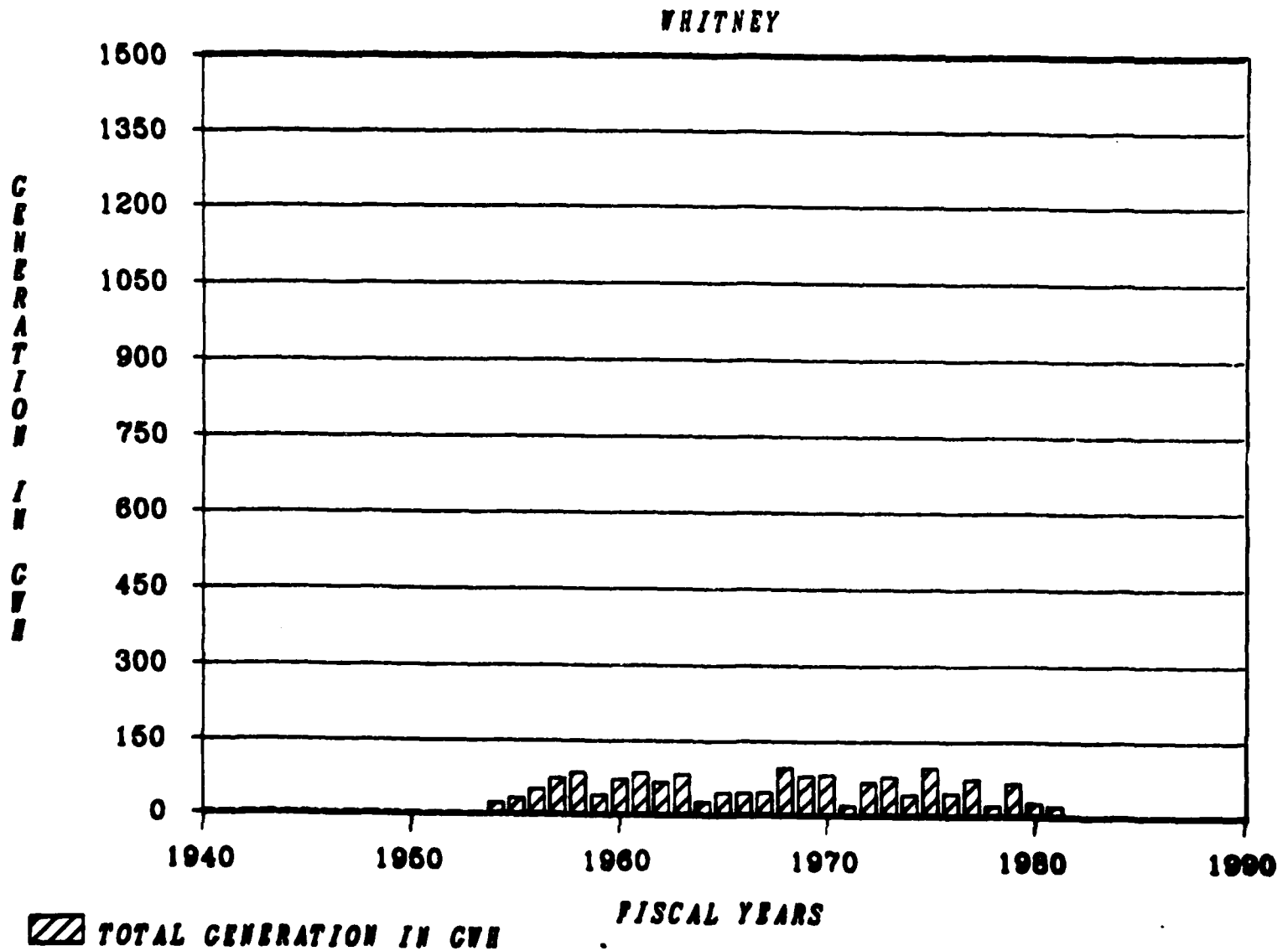
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

PLATE 16


WHITNEY
1500
1350
1200
1050
900
750
600
450
300
150
0
GENERATION IN GWH
1940
1950
1960
1970
1980
1990
FISCAL YEARS
TOTAL GENERATION IN GWH

[redacted]

1. [redacted]
2. [redacted]
3. [redacted]
4. [redacted]

SECTION VI - DISTRICT WATER CONTROL ACTIVITIES

1. SPECIAL RESERVOIR OPERATION.

a. Albuquerque District. There were no flood control operations during the past year. Galisteo had eight short periods of flow with very short duration storage, and Two Rivers had two brief periods of storage. Due to the short Rio Grande water supply, Middle Rio Grande Conservancy District borrowed water from the city of Albuquerque for irrigation. Cochiti and Abiquiu were operated during release of the Transmountain water to hold a steady flow below Cochiti to minimize flow past the Isleta diversion weir.

b. Fort Worth District. The drought of 1980 continued into the first part of 1981 and required the forwarding of three additional drought situation reports. There were no additional special operations due to the drought before it was ended with the floods in May and June. During those floods, 15 of the 22 flood control projects in the district used portions of their flood control storage. Also, there were 13 requests for deviation from the district to the division. Notable project operations are listed below.

(1) The two new projects in the district, Georgetown and Granger Lakes, first reached top of conservation pool in May 1981. Additional excess runoff in June caused Georgetown to utilize 67 percent of its flood pool, and Granger to utilize 56 percent of its flood pool. When releases were initiated to evacuate the stored flood water, it was found that some of the water broke out of the channel and travelled through an old slough in the lower San Gabriel River Basin causing access problems for one county road and land utilization problems for approximately four land owners. The releases were reduced for several days to determine the extent of the problem. After district personnel visited the area, it was recommended and approved to resume the regulated releases. The problem will persist until some action is taken to correct the low bank area where the water breaks into the slough.

(2) In February 1981, a meeting was held in the district office to present the new operating plan for Sam Rayburn Reservoir and B. A. Steinhagen Lake. Representatives from the Lower Neches Valley Authority (LNVA), contractor for the water supply, and the Southwestern Power Administration were in attendance. The procedure for using the new operating rule curve was presented, after which all agreed to use the new system until such time as a permanent salt water barrier can be completed on the Lower Neches River. To date, the use of the plan has been very successful.

(3) Some progress was made on the Water Control Data System (WCDS) in 1981. Thirty satellite data collection platforms were installed by COMSAT General, contractor for the USGS. That contract is to be terminated in January 1982 with the disposition of the dcp's still in doubt. If those dcp's are removed, they will have to be replaced by this office. Six dcp's have been installed by the district for a total of 36 working dcps. There are also 42 DARDC sites operating for a total of 78 currently functioning automated sites.

The Lower Colorado River Authority (LCRA), local sponsor for Marshall Ford Reservoir, a section 7 project, is in the process of installing 21 line of site radio (LSR) automated gages. The data from those LSR gages will be collected by the LCRA and then transmitted via telephone lines to the district minicomputer. Installation of the remaining 48 dcp's on hand in the district will continue as possible over the next year.

c. Galveston District: Barker and Addicks Reservoirs. The only special reservoir operation conducted at Barker and Addicks Reservoirs during the year was gate changes to provide for routine maintenance and painting of the gates and to allow for maintenance to downstream bridges. New area-capacity data and adjusted reference elevations were implemented beginning in FY 81. These changes were necessitated by land-surface subsidence throughout the reservoir area. A study was conducted on inflowing streams above both Reservoirs to determine the effect of relaxing the present district policy of not allowing drainage improvements on Federal lands. The results of this study indicated that some relaxation of the present policy was necessary to relieve critical drainage problems of existing developments upstream of Federal lands.

d. Little Rock District.

(1) The predominant aspect of FY 81 water control activities was the continuation of rainfall deficiencies through the first 7 months of the year. During the period October 1980 through April 1981, recorded rainfall was 50 to 55 percent of the long term averages on the White River Basin, 70 to 75 percent on the LRD portion of the Arkansas River Basin, and 60 to 75 percent on the Little River Basin. The distribution of the rainfall coupled with the dryness of the watersheds going into the year produced an even more pronounced reduction in streamflows. Discharge volumes during this period were 15 percent of their normal amounts on the Arkansas River and 30 percent of the average volumes for the White River. Flows on the Little River Basin were about 40 percent of their normal.

(2) During this period low flows on the White River along with extremely low stages on the Mississippi River reduced navigation depths in the entrance channel (lower 10 miles of the White River) to the McClellan-Kerr Navigation System from 16 October through 5 February. Depths in this reach receded to around 7 feet during the worst conditions in January. Restrictions on two sizes and depths greatly reduced navigation during the entire period and for all practical purposes stopped barge traffic into and out of the system. As a result of these restrictions and in view of the continuing shoaling problems, the district is investigating potential long range solutions to depth problems in this reach.

(3) The system of multiple-purpose lakes on the White River was also severely impacted by the continuation of drought conditions. These lakes received about one-third of their normal inflows through April and, in the case of Bull Shoals and Table Rock Lakes, a severe inflow deficiency continued throughout the year. Storage at the two projects receded to approximately 30 percent of the normal conservation volume by early spring. However, they have experienced some recovery and Table Rock is currently 85 percent full and Bull Shoals is 40 percent full. In general, water conservation measures by the

Southwestern Power Administration prevented the lakes from receding to even more severe levels. Their purchases of nonhydro energy to meet power contract commitments on this system enabled them to maintain lake levels as high as possible for peaking capacity.

(4) Even though the district was dominated by low flows, there were some flood control operations at all the district lakes, primarily during late spring and summer months. Flood regulation benefits were obtained for 3 rises on the Arkansas River System, 4 on the White River System, and 14 on the Little River System.

(5) Special operations at specific projects for Water Year 1981 are summarized in the following subparagraphs.

(a) Table Rock. As in past years, peak generation rates were restricted at the beginning of FY 81 because of low D.O. concentrations in the turbine releases. Peak generation rates were restricted to as low as 30 MW per unit during the period of 17 October through 7 November. A gradual lake overturn began on 7 November with the complete overturn occurring in December. In addition to restrictions on peak generation rates, oxygen injection equipment has been installed in the house station units in an effort to improve D.O. concentrations in project releases in FY 82. These injection facilities will be used during those periods when the main units are off line. Testing is currently underway to evaluate the effectiveness of these facilities.

(b) Bull Shoals and Norfork. Because of the severe lake drawdowns in the White River Lake System during the spring and early summer months, the normal fishery releases for the White River Trout Fishery were suspended as a part of the overall plan for water conservation. A contingency release plan geared to "as needed" requests by the Arkansas Game and Fish Commission was adopted for use throughout the drought period. Because of a failure in communications, temperatures reached lethal ranges in the trout fishery and on 20 July a fairly significant fish kill was experienced. The projects were then returned to their normal fishery release schedules for the remainder of the summer.

(c) Clearwater. Since its initial filling, Clearwater has experienced a noticeable seepage problem through its left abutment when lake levels exceed elevation 510 (approximately 16 feet into the flood pool). During late May, flood releases were curtailed to allow pool levels to rise to elevation 530 so the Foundations and Materials Branch could investigate the source and mechanics of the leak. Normal flood releases were resumed after completion of the field tests on 26 May. The data from these tests will be used to evaluate the severity of the problem and establish possible remedial actions.

During the period 27 March-10 April, the pool was raised about 2 feet above conservation level to collect water for special releases needed for instream flow needs tests on the Black River downstream of Clearwater Dam. These tests were performed for the Corps by the Kansas City Fish and Wildlife Service in conjunction with the ongoing White River Lakes Restudy. The primary purpose of the tests was to collect data from which fish and wildlife needs could be evaluated and projected for the various flow rates in the Black River.

As an aid to construction and filling operations at the Arkansas Game and Fish Commission's Duck Refuge area near Corning, Arkansas, we delayed the seasonal pool drawdown at Clearwater Lake to 15 October 1980 following last year's seasonal pool operation and until 21 September 1981 following this year's seasonal pool operation. The seasonal pool is normally lowered from elevation 498 to elevation 494 beginning on 15 September. As this is not considered a critical change to the regulation aspects of the project, we plan to incorporate the delay into our Clearwater Regulation Plan in the next manual update.

(d) Millwood. The Millwood Lake drawdown to elevation 255.0 which was begun on 2 September 1980 for the Arkansas Game and Fish Commission was completed on 1 March 1981. The drawdown is requested on 3-year cycles to aid in the control of aquatic vegetation and as a fish management tool. To date we have not received any information on the success of the drawdown.

During the period 7-18 November 1980, floodwaters were held in the pool to elevation 255.7 (conservation level was 255.0 in response to the AG&FC drawdown) for a coordinated release with Tulsa District projects on the Red River to provide flow conditions needed by LMVD at the old river structure on the lower Red River.

(e) Greers Ferry. As inflows and lake levels at Greers Ferry were substantially better than the other White River Lakes during the drought period at the first of the year, the seasonal pool, elevation 462, was continued through 30 September 1981 in lieu of the normal 1 May drawdown to increase the project's power storage capability. The extra storage would then be available to help offset the impact of the drought on the power production potential. However, inflows were inadequate to fill the pool to this level. The pool peaked near elevation 461 in mid-May and began a slow fall as power loads increased at the project.

(f) Deviations. The Little Rock District utilized 12 deviations from their project regulation plans in FY 81. These were, in general, of a minor nature. Most of the deviations were used in conjunction with the special operations described in the above subparagraphs. The remainder were for shoaling problems on the Arkansas River Navigation System and were for small increases in navigation pool limits except for one deviation for a 1-foot pool lowering at Pool 2 for construction work on a mooring cell.

(6) Special studies conducted during FY 81 in support of the district water management functions are summarized in the following subparagraphs.

(a) White River Lakes Restudy. This study has been underway since March 1975. Its purpose is to determine the advisability of modifying the regulation plans of the existing reservoirs in the White River Basin to provide additional measures for flood control, regional water supply, agricultural water supply, hydroelectric power, navigation, recreation, fish and wildlife, and other related land resources. It is in stage 3 and is scheduled for completion in September 1982.

(b) Hydropower Studies. During FY 81, the Little Rock District prepared and submitted the following reports on hydropower studies on the Arkansas River:

Survey Report - Murray L&D
Stage 1 and 2 Report - L&D 8, 9, and 13
Draft Survey Report - L&D 8, 9, and 13

In addition, work was accomplished on the following hydropower reports for submission in early FY 82.

Final Survey Report - L&D 8, 9, & 13
Stage 1 & 2 Report - L&D 2 through 6
Draft Survey Report - L&D 2 through 6

(c) Flood Emergency Plans. Flood Emergency Plans for Chapter 9 of the O&M manuals, inundation maps for Reservoir Regulation Manuals, and for Conway Filling D. M. Computations were completed for Norfork, Clearwater, and Conway Dams. Computations on the other dams are in the stages described below:

Beaver	90% complete
Table Rock	90% complete
Bull Shoals	0% complete
Nimrod	25% complete
Blue Mountain	20% complete
Dam No. 2	95% complete

e. Tulsa District.

(1) Arkansas River Basin. Flows in the Arkansas River basin were only about 25 percent of normal this year. No major flooding was experienced during the year. Inflows into Hulah Lake on the Caney River were only about 7 percent of normal. Toronto and Fall River Lakes, which had only 10 percent and 40 percent of their conservation storages remaining at the beginning of the FY, fell to 6 percent and 24 percent before refilling in May. Record low pool levels since ultimate conservation impoundment were established at Birch, Council Grove, Heyburn, Hulah, Oologah, and Toronto. Normal and above normal rainfalls over most of the Arkansas River basin during May, June, and July broke the drought pattern which had existed for more than a year. Impoundment was begun at Big Hill Lake on 31 March 1981 and at El Dorado Lake on 29 June 1981. Neither pool had risen to the minimum conservation level by the end of the FY. Kansas Gas and Electric Company began using the entire yield of the water supply storage in John Redmond Reservoir in October 1980. An agreement with the Kansas Board of Agriculture, Water Resources Division, for passing natural flows through John Redmond Dam and Reservoir for downstream water rights was signed in August 1981. Hominy Creek was diverted through the

outlet works at Skiatook at 2:20 pm on 26 June 1981. Water supply releases of 30,000 ac-ft and 25,000 ac-ft were made from Canton in November 1980 and April 1981 for the city of Oklahoma City. Special releases were made at Keystone Dam and at Robert S. Kerr and W. D. Mayo Locks and Dams in September to provide flows for raft races at Tulsa and Fort Smith. All three power units at Webbers Falls Lock and Dam remained out of service. No navigation tapers were made this FY.

(2) Red River Basin. Lake pool elevations were below normal at all projects except Pine Creek and Hugo Lakes at the beginning of the fiscal year. The spring rains allowed all the projects from Lake Texoma and Arbuckle Lake and east to enter summer with full conservation pools. Arbuckle set a record low pool of 867.61 feet on 24 February 1981. Most of the projects ended the fiscal year with the lowest pool elevations of the year. Irrigation releases drew Altus Reservoir to elevation 1525.78 at the end of September. This is the lowest pool level since October 1953 and 92 percent of the irrigation and water supply storage was withdrawn. Both hydropower projects in the Red River basin ended below normal with Lake Texoma down 27 percent and Broken Bow down 35 percent into their conservation pools. The precipitation amounts for the Red River basin varied from near normal in the western part of the basin to very much below normal in the eastern part of the basin. The basin rainfall at the Corps' projects varied from 18.44 inches below normal at Pat Mayse Lake to 4.50 inches above normal at Waurika Lake. Months with above average rainfall in the western part of the basin were December 1980 and February through August 1981. In the eastern part of the basin the only months with above average precipitation were October of 1980 and July and August 1981. Although the rainfall was near normal in the western part of the basin, the inflows were generally well below normal with some above normal inflows during the spring. Altus Lake had only 14 percent and Lake Texoma had 61 percent of normal inflows. The inflows in the eastern part of the basin were also below normal and varied from 73 percent at Pat Mayse and Hugo to 88 percent at Pine Creek. Inflows were above normal in the eastern part of the basin in October and December of 1980 and in June and July of 1981. A seasonal pool operation was started at Pine Creek Lake in an effort to improve the fish habitat. After the Fourth of July weekend the pool was drawn from 443.5 feet to 440.0 by the end of July 1981. This elevation was held through the Labor Day weekend. The pool was then lowered to elevation 438.0 during September. Water was diverted through the conduit at the Clayton Lake project at 9:20 am on 4 May 1981. Special releases or operations were made at Lake Texoma and Broken Bow Lake to facilitate canoe races.

2. WATER QUALITY PROGRAM AND ACTIVITIES.

a. Albuquerque District.

(1) The goals of the Albuquerque District water quality data collection program are to provide an accurate picture of lake conditions as to pH, temperatures, and dissolved oxygen. Trends can be monitored to show improvement or degradation of water quality and the data can be used to identify public health, fish and wildlife problems.

(2) Data are entered into EPA STORET data base and used to monitor standard lake conditions. Monthly readings for pH, dissolved oxygen, and temperature are taken downstream during water release to monitor discharge water quality.

(3) Parameters measured are surface pH, turbidity, and dissolved oxygen-temperature profiles at 1 meter intervals to the lake bottom. Data are collected monthly as follows:

PROJECT	LOCATIONS SAMPLED	NUMBER
Abiquiu	Chama inflow, Canones inflow, reservoir near dam, release	4
Cochiti	Bland canyon, reservoir near dam, release	3
Conchas	Conchas and Canadian inflow, reservoir near dam, irrigation headworks	4
John Martin	Arkansas inflow, reservoir near boat ramp, reservoir near dam, reservoir near Ft. Lyon Hospital, two Lake Hasty locations, release	7
Trindad	Purgatoire inflow, reservoir near dam, release, reservoir near Carpios ridge	4
Jemez Canyon	Inflow, reservoir near dam	2
Santa Rosa	Pecos inflow, reservoir near dam, reservoir near asphalt pit, release	4

Biological samples are tested monthly at Cochiti and occasionally at other projects. One person in operations is trained in the use of a gas chromatograph to test for dissolved nitrogen. Base line testing at projects is planned during 1982 spring runoff. Tests at Santa Rosa are planned for hardness and sulfate to monitor effects of gypsum deposits in the reservoir. Samples of inflow and releases at two reservoir locations will be tested monthly.

b. Fort Worth District.

(1) Goals. The goals of the Fort Worth District water quality data collection program are to collect water quality data at all the existing projects in order to establish base line conditions, monitor subsequent changes, and identify water quality problems and resolve same where possible.

(2) Summary of Activities.

(a) Water quality sampling program at the Fort Worth District for FY 82 will continue at about the same level as for FY 81. Intensive monitoring started in FY 81 will establish base line conditions by the end of FY 82 at 17 of 21 projects in the district. Intensive monitoring at these 17 projects will be discontinued at the end of FY 82. Beginning FY 83, maintenance monitoring will be started at projects where intensive monitoring showed problems. Intensive monitoring as well as maintenance monitoring will be conducted in accordance with SWD draft regulations on Water Quality Activities at SWD Civil Works projects.

(b) The district completed turbine venting tests at Sam Rayburn Reservoir during the summer of 1981. Turbine aeration at Sam Rayburn depended on the existence of a negative static pressure in the draft tube. However, the turbine units at Sam Rayburn have the turbine water wheel set below tail-water elevation, thus producing only a small negative pressure or even positive pressure in the draft tube except at extremely low gate openings.

(c) The first set of tests was made with one turbine in operation at a discharge of 2,200 cubic feet per second (c.f.s.). Turbine vent was closed on the first day of the test and opened on the second day of test. The D.O. concentration level of 3 mg/l was observed with the turbine vent closed and 4.9 mg/l with the turbine vent open. With about 45 percent gate opening for a discharge of 2,200 c.f.s. and with the turbine vent open, an improvement of about 2 mg/l of D.O. was observed in the water released through the turbine. This improvement was not from venting alone. Part of the improvement was due to the aeration by turbulence of water flowing out of the powerhouse. It was observed that airflow into the venting system from the atmosphere was higher at the beginning of releases, but reduced considerably when the releases and tail-water elevation stabilized.

(d) The second set of tests consisted of releases at 4,400 c.f.s. with one turbine in operation, both with and without the turbine venting. Tests with vent open had to be discontinued within minutes after starting of the tests because of the water being pulled into the venting lines as a result of positive pressure in the draft tube. This was caused by the decrease in the velocity of discharge through the turbine runner and increase in the tail-water elevation.

(e) The third set of runs consisted of releases at 2,200 c.f.s. through each of the two units (total 4,400 c.f.s.) both with and without the venting. The negative pressure produced was so small that the airflow from the atmosphere into venting line was very insignificant. The result was that there was very little difference in the D.O. content of turbine discharges with and without the venting.

(f) Further tests of 3,300 c.f.s. through each of the two units (total 6,600 c.f.s.) were cancelled since tests with 2,200 c.f.s. through each of the two units (total 4,400 c.f.s.) were not sucessful.

(g) The problem of positive pressure can sometimes be overcome by installing wedge shaped deflector plates in the draft tube as was done at the Alabama Power Company's Logan Martin Dam. Deflector plate causes the flow to separate from the draft tube wall and produces a pressure lower than the free stream static pressure. However, discussion with the Alabama Power Company personnel indicates that the deflector plate method is not suitable for any turbine with adjustable blade runner, similar to the one at Sam Rayburn. In order for the flow to separate from the draft tube wall to produce negative pressure, the flow leaving the turbine runner must be in line with the deflector plate. It is not possible with the adjustable blade runner for the flow to be in line with the deflector plate.

(h) It is noted that D.O. levels during these tests, except on the first day of tests when the D.O. level was 3 mg/l, were very nearly equal to or exceeded the required minimum of 5 mg/l. However, the D.O. measurements taken in the stilling basin each morning before the tests were started indicated D.O. concentration levels of less than 1.6 mg/l with surface water temperatures ranging between 65°F and 70°F. Contrary to the premise that the fish will not survive in waters with D.O. concentrations less than 2 mg/l, several different types of fish-stripers, bass and catfish of 1 to 2 feet in length--were observed moving in large groups in the stilling basin at all times except when power was being generated.

(i) The only remaining viable physical option to the D.O. problem below Sam Rayburn Reservoir is a skimming weir. However, the very basic question as to what are the benefits remains unanswered. No fish kills or environmental damages have been observed. The State regulations allow 8 hours of diurnal variation down to 4 mg/l of D.O. We usually generate for 12 hours or less per day in the summer. Since no obvious environmental damage has occurred, either the State or LNVA should consider a study to evaluate whether any damage does actually occur. In light of currently available information, it is recommended that the State be asked to consider changing the D.O. standards for segment 609 below Sam Rayburn to allow up to 12 hours of daily variation down to 4 mg/l of D.O. Should future detailed biologic studies by LNVA or the State indicate significant environmental damage, further consideration should be given to the skimming weir option.

c. Galveston District.

(1) Barker Reservoir. The 3-year water quality program for Barker Reservoir is being concluded upon mutual agreement with the U.S. Geological Survey that sufficient data now exists to show the effects of the length of impoundment on quality and what release rates produced the most improvement downstream. A detailed report will be available in FY 82.

(2) Addicks Reservoir. The 3-year water quality program for Addicks Reservoir is being concluded upon mutual agreement with the U.S. Geological Survey that sufficient data now exists to show the effects of the length of impoundment on quality and what release rates produced the most improvement downstream. A detailed report will be available in FY 82.

d. Little Rock District. The overall goal of the water quality management program is to improve or maintain water quality in the Little Rock District projects at the highest level possible, consistent with each project's purposes, design, and funding. Specific objectives to achieve this goal will be identified as the District Water Quality Management Plan is approved and implemented. The district water quality management programs are divided among various elements of the Construction-Operations and Engineering Division by functional missions.

(1) Construction-Operations Division Responsibilities. The Permits Branch has been given the responsibility for conducting the district water quality program for Construction-Operations Division. The branch is composed of a Permits and Water Quality Section and a Compliance and Data Collection Section. Since the regulatory functions of the branch closely parallel functions of the division's water quality management program, field activities are very conveniently and efficiently combined to implement the programs. This is primarily due to the related procedural and logistical requirements of both regulatory functions and water quality activities. These responsibilities include the following programs relating to water quality management.

(a) Lake Monitoring. General lake water quality monitoring of all Little Rock District Lakes other than the main stem of the Arkansas River is presently performed three times per year on each lake at six to eight stations at various depths. The field work is done by USGS personnel under Corps of Engineers contract. Approximately 26 parameters are measured to ascertain general lake water quality and to provide background data in abating water pollution. There are no State or other Federal programs which routinely provide these data on the main stem reservoirs operated by the Corps. Data obtained are maintained in the Permits Branch and are available from STORET and annual USGS Water Resources Data Publications for Arkansas and Missouri. Data obtained are used to evaluate long and short term water quality changes, to identify pollution sources, and to properly manage lake water quality. Their evaluations include the identification of potential pollution sources so

as to enable the Corps' influence to bear its persuasiveness at pressure points in decision making processes of others. This will assist project personnel and district officials in assuring that best management practices are followed for erosion control in development around lake areas and that best available technology is applied where domestic and industrial wastewater discharges are allowed in district lakes. These findings are published in Water Quality Management Reports and annual updates for each project. The Greers Ferry Water Quality Management Report has been published and the Table Rock Report will be published as soon as final revisions are made.

(b) Discharge Permit and Operational Monitoring. Monitoring of district wastewater treatment systems and other NPDES discharges in Missouri and Arkansas is performed in accordance with NPDES permit requirements. Permits Branch personnel obtain the necessary monthly samples and the USGS laboratory analyzes these for BOD, bacteria, and suspended solids. Operational monitoring performed twice weekly by the sewage treatment plant operators includes pH, flow, chlorine residual, dissolved oxygen, and settleability. This program is conducted in accordance with Section 402 of the Clean Water Act. This program is implemented by the State of Missouri and EPA, Region VI in Arkansas.

(c) Bathing Beach Monitoring. Monitoring is performed five times monthly by resident area personnel on district bathing beaches during the swimming season to insure safe bacteriological quality of lake waters. Samples are analyzed by the Missouri and Arkansas Health Departments free of charge. A central log containing results for all projects is maintained by the Permits and Water Quality Section. This program is administered in accordance with SWD Regulation 1130-2-9 and applicable State laws.

(d) Potable Water Monitoring. Potable water supplies of the district are tested for physical, chemical, and bacteriological quality to insure their adequacy and safeness. Bacteriological samples are collected by resident area personnel and mailed to the appropriate health departments, which presently perform the analyses free of charge. Permits Branch personnel collect samples for complete chemical analysis by the health departments on each new water supply and for periodic nitrate analysis thereafter. Data obtained are used in an annual sanitary survey and report forwarded to SWD for reporting to OCE. This program is conducted as per ER 1130-2-407 and applicable Federal and State drinking water standards for noncommunity water supply systems.

(e) Dredged Material Analysis. Three times yearly, a bottom sediment survey is performed at eight locations along the Arkansas River navigation project and less frequently at other locations on other district rivers and lakes. Sediment and water column samples are frozen and sent to SWD laboratory for sediment, water, and elutriate analyses. The purpose of this program is to detect potential effects of dredging operations on water quality. These operations include both commercial dredging under Corps permits and channel maintenance dredging performed under Corps of Engineers contract.

(f) Pollution Complaints and Hazardous Substance Spill. Permits Branch receives calls reporting instances of pollution and hazardous substance spills and coordinates these reports with appropriate Federal and State officials. On occasions, branch personnel investigate these pollution complaints to verify existing conditions and determine effects on project operations. During oil and other hazardous substance spills, branch personnel participate in emergency containment and cleanup measures with Coast Guard and EPA officials and when so designated act as the Federal on-scene coordinator for these two agencies.

(g) Special Studies. The Compliance and Data Collection Section routinely assists Engineering Division in obtaining samples and analyses for special water quality studies conducted by that division, such as for planning purposes. Coordination is also accomplished with studies being performed by other agencies such as EPA, State Pollution Control, Health Department, Soil Conservation Service, etc.

(2) Engineering Division Responsibilities. There is no specific organization for water quality studies within Engineering Division. Responsibility is assigned to the various elements based on the nature of the program or study.

(a) Lake Profile and Release Monitoring. Water quality data have been collected from Beaver, Table Rock, Bull Shoals, Norfork, and Greers Ferry Lakes since 1966. Presently, monthly profiles of pH, temperature, dissolved oxygen, and specific conductance are obtained from the five lakes, as well as a grab sample below each dam. Additional profiles are obtained from Table Rock Lake during critical times of the year. These data are used in the design of operating features needed for preventing or lessening water quality problems downstream of the dams. They also contribute to the water control management activities required to maximize dissolved oxygen concentrations in the fall releases from Table Rock and to maintain acceptable temperatures downstream of all lake projects from May through October. Hydraulics Branch is responsible for this program and data collection is contracted to USGS. The program was expanded in FY 81 to include Blue Mountain, Clearwater, and Nimrod Lakes. Similar data collection at DeQueen, Dierks, Gillham, and Millwood Lakes began in April 1981 after these lakes were transferred to LRD from the Tulsa District.

(b) Instream Flow Problems and Needs Evaluation. The results of preliminary instream flow studies conducted in response to EC 1110-2-214 were presented in part III of last year's report. Special studies were recommended by the district for Nimrod, Blue Mountain, Clearwater, and Greers Ferry Lakes to investigate problems identified in the prelimnary studies. These four projects were included in a group of 20 studies recommended by SWD for further study, but they have not been funded yet.

Evaluations of instream flow needs for fisheries in the tail waters of Bull Shoals, Norfork, Greers Ferry, and Clearwater Lakes have been conducted by the U.S. Fish and Wildlife Service under contract to the Little Rock District. The Incremental Flow Methodology developed by the Cooperative Stream Flow Group, Fort Collins, Colorado, was used for the evaluations. This method quantifies the usable potential habitat available to various life history stages of selected fishes for a range of discharges.

Work continues in an effort to minimize adverse effects on the White River trout fishery due to high temperatures. An emergency procedure to utilize conduit releases is being formulated. A field study is being planned to measure time of travel and related temperature changes for different discharge rates on the White River. The results will be very useful because the timing of releases is critical in preventing excessively high temperature. Four temperature monitoring stations are being installed on the White and North Fork Rivers to provide real time temperature data.

(c) Special Studies. The Planning and Hydraulics Branches periodically conduct water quality studies as part of normal project planning efforts such as preparation of survey reports, design memorandums, and environmental impact statements. Certain special water quality related studies are identified below:

(i) Table Rock Dissolved Oxygen. The impacts of various levels of dissolved oxygen in the releases from Table Rock Lake are being studied: how they affect the fishery in Lake Taneycomo and the socioeconomics of the surrounding area. Alternative solutions will also be investigated as appropriate. The study being conducted by LRD with assistance from SWD and others is continuing. Some delay has been experienced because of shifted priorities and utilization of available expertise; however, we are resuming with the development and evaluation of the technical features which are to be considered in different combinations as alternative solutions to the problem. In the interim, we have begun the technical evaluation of the benefit analysis developed by the Missouri Department of Conservation. We have also printed some of the completed reports to be used as references and appendixes to the study report.

Additional oxygen lines have been designed by SWD and LRD and installed to provide oxygen to the house unit penstocks. These new lines tie into the existing oxygen lines serving the main turbines. These additional lines will provide oxygen input during the seasonal low hypolimnetic dissolved oxygen period at those times when the main turbines are not generating. Tests are presently underway (October) to evaluate the effectiveness of this system.

(ii) Greers Ferry Lake Environmental Protection Study. The Planning Branch has completed the problems and needs determination of this 208 Water Quality Management-type study which also addresses solid waste disposal needs.

(iii) Little Rock Metro Urban Study. This study, which included a 208 WQM study, was completed in FY 81. Most of the water quality work, which included data collection, modeling, and evaluation, was contracted.

(iv) Southwestern Lakes. A water quality study of the Tri-Lakes and Lake Millwood was conducted during the summer of 1981. The data collected will be used to determine base line water quality conditions and establish the permanent monitoring program, prepare environment assessments for Millwood and Dierks, identify existing or potential sources of pollution and relating them to any resultant effects on the lakes, and evaluating causes of short and long term changes in water quality.

(v) Norfork Units 3 & 4 Feasibility Study. An essential part of this study is an evaluation of the water quality impacts of the proposed pump-back units and afterbay on Norfork Lake, within the proposed afterbay, and downstream on the North Fork and White Rivers. Modeling has been initiated and will be completed in the early part of FY 82.

(vi) White River Lakes Study. This study includes an evaluation of how the release schemes of Bull Shoals, Norfork, and Greers Ferry Lakes might be modified to minimize adverse water qualty impacts downstream.

(vii) Taylor Bay Siltation Study. This study investigated the effects of suspended sediment on fishing in Taylor Bay near Augusta, Arkansas. The sources of the silt were identified and alternate solutions were developed. Funds are included in the FY 82 budget to develop a plan to reduce or eliminate sediment in Taylor Bay.

(d) Laboratory Capabilities. Water quality analyses performed at the district level are limited to the following capabilities:

(i) Field testing of water quality which may be conducted by Corps personnel includes dissolved oxygen, temperature, pH, specific conductivity, Secchi Disc measurements, and others using HAC field test kits approved by EPA.

(ii) A small laboratory located in Construction-Operations Division can perform the following analyses: dissolved oxygen, color, turbidity, alkalinity, hardness, and others using colorimeter methods for analyses.

(e) Data Management. Lake water quality data collected and analyzed by USGS are entered into WATSTORE AND STORET, the computerized data management systems of the USGS and EPA, respectively. These data are also published in the annual USGS water resources reports for Arkansas and Missouri. Results of potable water, bathing beaches, NPDES, and other monitoring are kept in log books or files as appropriate. Special data collection results are contained in the reports dealing with the specific subject for which data were collected.

(f) Future Water Quality Management Program. A comprehensive coordinated District Water Quality Management (WQM) Plan is being developed. It will assign responsibilities for the various aspects of the overall program and establish guidelines for assigning responsibility for new programs and studies. A District Water Quality Committee is being established. It will guide the development of the WQM Plan, periodically evaluate the program, and help establish priorities for future work. A major feature of the plan will be the establishment of a three-phase process for evaluation of all projects. Phase 1 would result in specific WQM objectives for each project based on a preliminary assessment of available data. Phase 2 would involve collecting data, developing and assessing alternatives, and recommending programs to meet the project objectives. Phase 3 would be implementation of the recommended plan and monitoring to assess its success.

Funds have been budgeted for FY 82 to establish a STORET account and data file, assess nitrogen supersaturation potential at selected projects, and assess the performance of the unique outlet structure design at the Conway Water Supply project.

e. Tulsa District. Studies conducted to evaluate various regulation procedures designed to provide quick response to potential fish kills and long term regulation procedures to enhance downstream water quality were continued during FY 81. These studies included the power projects which typically release water from the anoxic hypolimnetic zone. During the summer and early fall of 1981, dissolved oxygen, temperature, conductivity, and pH data were taken at Lake Texoma, Eufaula, Keystone, Broken Bow, and Tenkiller. Data were taken at specific intervals when releases were being made through the power units, sluice gates, or both in order to evaluate effects downstream.

(1) At Keystone water samples were analyzed for chloride and sulfate content when unusually high conductivity data were observed. A minor fish kill was observed below Keystone during a period of no generation in early May 1981. A possible cause was leakage of anoxic water having a high conductivity through the power units during a period of no generation. Minimal releases through a sluice improved downstream conditions during periods of no power release.

(2) Studies of effects of releases from the various intake levels at Birch on downstream dissolved oxygen content were performed during August. These studies showed releases through the low flow facilities to have D.O. levels near saturation even though the D.O. level in the lake was anoxic below a depth of 5.5 meters.

(3) Data was taken at Hugo to evaluate lake stratification in conjunction with a proposed selective level water supply intake for the city of Hugo, Oklahoma. At Pine Creek Lake, localized destratification tests were run in conjunction with Oklahoma State University research studies.

(4) Water quality samples were taken on Cow Creek and Cache Creek during the summer to determine if releases from the Waurika water conveyance system would help the quality of these streams. The results are not yet available.

(5) Data collected below Denison Dam showed the conditions to be critical for the fishery in early September. When fish were observed in stress on 4 September, discharge of 50 c.f.s was made through the flood conduit. This release not only prevented a fish kill, but improved the fishing during nongenerating periods. D.O. levels were near saturation below the stilling basin as a result of the release. The release ended on 22 September when the lake had sufficiently destratified.

3. SEDIMENT PROGRAM AND ACTIVITIES.

a. Albuquerque District.

(1) Revised area-capacity data for Trinidad and John Martin, based on FY 80 surveys, were implemented in FY 81. A technical report by LTC Peter F. Lagasse of the U.S. Military Academy in West Point which assessed the impact of the operation of Cochiti on the Rio Grande channel between the dam and Isleta was completed in December 1980. Copies of this report are available.

(2) A sedimentation study of the Rio Grande Basin between Cochiti Lake and Elephant Butte Reservoir has been submitted to the district in final draft by the contractor, Simons, Li and Associates of Ft. Collins, Colorado. This study includes an analysis of the effects of the existing features of the Middle Rio Grande Project over a 100-year period of time. Computer programs for routing water and sediment (by size fractions) through the river system have been developed, as well as a program which determines reservoir sediment deposition based on the empirical area-reduction method. User manuals for these programs will be made available.

b. Fort Worth District.

(1) Sediment activities consisted of the routine studies in connection with hydrology investigations.

(2) The sediment sampling stations for the Navasota River near Bryan, Brazos River Basin, and Trinity River near Oakwood, Trinity River Basin, were discontinued.

(3) The field portion of the Bardwell Lake sediment resurvey, Trinity River Basin was completed during the period July-September.

c. Galveston District. No sediment work was conducted at Barker and Addicks Reservoirs during FY 81.

d. Little Rock District.

(1) Summary of Activities. Suspended sediment samples are collected at 17 stations. The 247 sediment ranges on the main stem of the Arkansas River are resurveyed as near annually as funds and survey work load permit. From October 1980 through September 1981, there were 143 ranges scheduled for resurveying; all resurveys were accomplished. There are 139 ranges scheduled to be resurveyed in FY 82. Fifty-four tributary ranges are resurveyed less frequently when appreciable deposits are suspected. About 50 index ranges out of 350 sediment ranges in the other eight lakes are resurveyed at 10-year intervals. During the period from October 1980 through September 1981, none were resurveyed.

(2) White River Entrance Channel Model. Water years 1980 and early 1981 produced drought-like conditions along the Mississippi River Basin. The conditions created intermittent navigation depth problems in the White River Entrance Channel. For 58 days between mid-October 1980 and early February 1981, entrance channel traffic was restricted to tows of limited size and draft because of channel constrictions resulting from low Mississippi River stages. A Design Memorandum (White River Entrance Channel, Mississippi River to Arkansas Post Canal, Design Memorandum No. 1, General, Supplement No. 3) was prepared which described the problem, described the reasons the problem occurred, and addressed possible solutions to the problem. The approved D.M. recommended a physical hydraulic model at the Waterways Experiment Station to verify the recommended actions and study their effectiveness. Data is being gathered to begin development of the physical model.

e. Tulsa District. The following sediment activities were accomplished during FY 81. Segmental elevation-area data for John Redmond Dam and Reservoir was developed. Reconnaissance surveys of Fort Supply and Heyburn Lakes and John Redmond Dam and Reservoir were completed. A contract was initiated and completed for the installation of sedimentation and degradation ranges at El Dorado, KS. Installation of the end monuments and initial survey of sedimentation and degradation ranges at Clayton Lake were completed. Only those sedimentation ranges set forth in the D.M. 15, Clayton Lake, Sedimentation and Degradation Ranges, Apr. 1975, have been installed. Installation of the inner monuments will be accomplished during the first part of FY 82. The 1962 and 1969 Report on Resurvey of Sedimentation and Degradation Ranges for Lake Texoma was approved. Reservoir Sediment Data Summary for John Redmond Dam and Reservoir was approved and drafts for Webbers Falls L&D 16, R.S. Kerr L&D 15, Keystone Lake have been prepared. Hydrographic survey data was collected on Bardwell Lake for the Fort Worth District. Suspended sediment samples were collected at 17 sites.

4. Cooperative Programs.

a. Albuquerque District. The climatic program with the Weather Bureau is unchanged. The cooperative stream gaging program with the U.S. Geological Survey covers 43 stations. All stations on local protection projects have been discontinued. Total program cost for FY 82 is $192,750.

STATION SUMMARY

BASIN	STATIONS		
	STREAM	RESERVOIR	TOTAL
Arkansas	8	2	10
Canadian	4	1	5
Rio Grande	13	4	17
Pecos	8	3	11

Note: Only 3 gages not associated with project operation.

b. Fort Worth District.

(1) National Weather Service. Funds were transferred by FWD to the NWS in the amount of $84,167 for FY 81. Under ongoing programs, the Corps collects rainfall at project offices while the NWS collects all other rainfall reports and maintains weather stations, including those at Corps' projects. Rainfall summaries are transmitted to the Corps via teletype, telephone, and a daily computer printed map which displays current totals for reporting stations. Supplemental and accumulative storm total printouts are provided upon request. Additional hydromet information was received from the NWS via the teletype circuits and AFOS. Radar scans were obtained on facsimile copier via a direct connection to the NWS Stephenville radar site (which covers the geographic area where the majority of the district's projects are concentrated) and via commercial long-distance telephone into NWS radar sites at Galveston, Hondo, and Brownsville, Texas, and into Oklahoma City, Oklahoma. Continuous updates are possible during storm periods.

(2) U.S. Geological Survey.

(a) General. The USGS performed operation and maintenance on all streamflow, lake level, sediment sampling and some water quality stations in cooperation with the district. In addition, they arranged for reporting at river stages during flood events, made supplemental flow measurements, and processed all published data.

(b) Funds. The Fort Worth District transferred to the USGS for the Cooperative Stream Gaging Program a total of $562,830 in FY 81. Table 1 indicates the number of stations, the types of funds for each of several groups of stations and both the USGS and the CE contributions toward the total station cost.

c. Galveston District.

(1) Barker Reservoir. Two cooperative programs are in existence in relation to the operation of Barker Reservoir. The program with the U.S. Geological Survey provides the operation and maintenance for the gates that furnish streamflow and reservoir content data used in the operation of the project. The program with the National Weather Service provides for the operation and maintenance of the precipitation gages and collection of data used in project operation. This project shares some of the streamflow and precipitation data used in the operation of the adjacent Addicks Reservoir.

(2) Addicks Reservoir. Two cooperative programs are in existence in relation to the operation of Addicks Reservoir. The program with the U.S. Geological Survey provides the operation and maintenance for the gates that furnish streamflow and reservoir content data used in the operation of the project. The program with the National Weather Service provides for the operation and maintenance of the precipitation gages and collection of data used in project operation. This project shares some of the streamflow and precipitation data used in the operation of the adjacent Barker Reservoir.

d. Little Rock District. Approximately 176 rainfall and/or river stage reporting stations were operated by the National Weather Service and the Corps of Engineers in or near the Little Rock District. Of these, 112 stations are in the Corps of Engineers/National Weather Service program. The remaining 64 stations are operated solely by the National Weather Service within or near the Little Rock District. Six of these stations are airway stations that report at 6-hour intervals. Reports from these stations are used in forecasting streamflows for flood warning and operation of reservoir projects. The stream gaging data required by the district are collected under a cooperative agreement with the USGS. During the fiscal year, 100 stations were operated, of which 67 were operated cooperatively and 33 were operated by the Corps of Engineers. The FY 81 total cost for collection of streamflow and some sediment data was $377,660 of which $226,130 was transferred to USGS. The FY 82 cooperative program was increased by six stations and contemplates a cost of $429,670 of which $254,120 will be transferred to USGS.

e. Tulsa District. Much of the information required for regulation, investigation and design of our water resources projects results from the reporting and measurement of flow, water quality, and sediment provided by a cooperative stream gaging program with the USGS. During FY 81 this cooperative program included 250 stations of which 40 were operated independently

EXPERIMENT FORM (March 1976)

SOUTHWESTERN DIVISION

TABLE 1
PROPOSED COOPERATIVE STREAMFLOW DATA PROGRAM SURVEY
FOR
FISCAL YEAR 1981
PART A

FORT WORTH DISTRICT
8 August 1980 DATE OF PREPARATION
REPORTS CONTROL SYMBOL DAEN-CWE-14

STATIONS IN COOPERATIVE PROGRAM WITH USGS

GROSS DOLLARS SUPPORTING PROGRAM
PROPOSED TRANSFER TO USGS FROM CORPS

CLASS OF FUNDS	NUMBER OF STATIONS	USGS AER FUNDS	GEN INVES	CONST GEN	O&M	TOTAL	TOTAL CE/USGS PROGRAM	FOR CORPS OPERATION	OTHER USGS FUNDS	TOTAL FOR CORPS	TOTAL STATION SUPPORT
B	4	0	14,500	0	0	14,500	14,500	670	0	15,170	15,170
C	11	9,620	0	0	0	0	9,620	1,080	0	1,080	10,700
D	5	0	0	11,640	0	11,640	11,640	850	0	12,490	12,490
E	85	0	0	0	457,080	457,080	457,080	27,000	15,020	484,080	499,100
F	18	0	0	79,610	0	79,610	79,610	4,640	8,140	84,250	92,390
SUBTOTAL	123*	9,620	14,500	91,250	457,080	562,830	572,450	34,240	23,160	597,070	629,850

*Note: Total is 1 less than shown Station 08110200 has dual funding.

PART B
TOTAL STREAMFLOW DATA PROGRAM FOR CORPS OF ENGINEERS

CLASS OF FUNDS	TOTAL	COST FOR CORPS OPERATION	NUMBER OF STATIONS	COST FOR CORPS STATIONS	CORPS GRAND TOTAL COST
B	14,500	670	NONE	NONE	15,170
C	0	1,080			1,080
D	11,640	850			12,490
E	457,080	27,000			484,080
F	79,610	4,640			84,250
TOTAL	562,830	34,240			597,070

CLASS OF FUNDS:

B - Surveys
C - General Coverage
D - Advance Engineering and Design
E - Operation and Maintenance
F - New Work or Construction

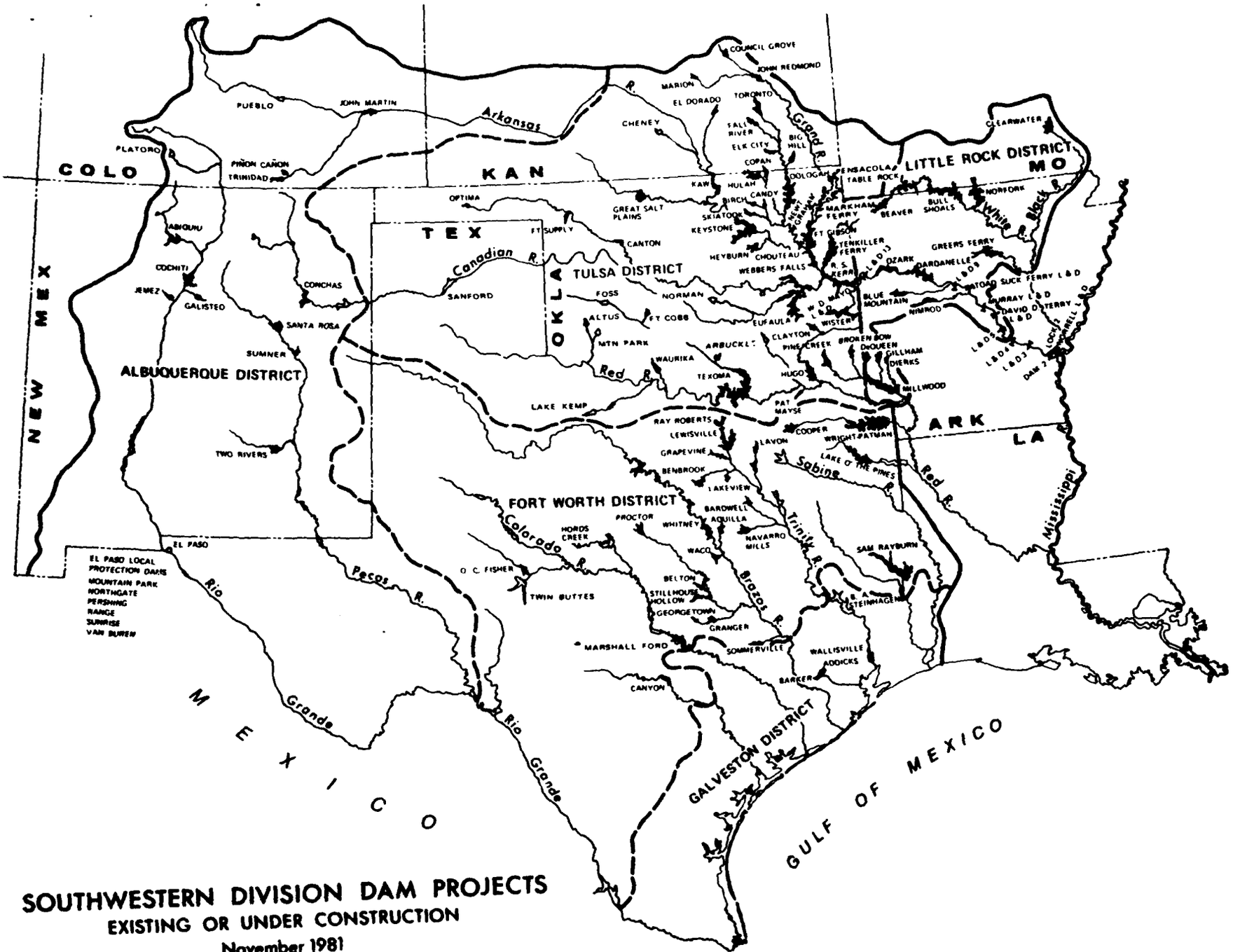
by the Corps of Engineers. The gaging program in the Tulsa District cost $769,450 in FY 81 with $567,810 of this being transferred to the USGS for operation of stations. The following tabulation shows a breakdown of the program by class of funds used to finance the program.

Class of Funds	No. of Stations	C of E Cost
Survey Investigation General Coverage	25	6,300
Planning	7	59,470
Operation & Maintenance	209	644,150
New Work & Construction	9	59,530
TOTAL	*250	769,450

*Some stations are counted under more than one classification.

SECTION VII - RESERVOIR DATA SUMMARY

1. SWD Map
2. Index By Basins
3. Index in Alphabetical Order
4. Data Tables



SOUTHWESTERN DIVISION DAM PROJECTS

EXISTING OR UNDER CONSTRUCTION

November 1981

(WITH SECTION 7 FLOOD CONTROL PROJECTS ADDED)

LAKE SUMMARY TABLE INDEX

LAKE NAME	STREAM	DIST	STATE	YR COMP	POOL ELEVATION CONS	POOL ELEVATION FC	CAPACITY** 1000 AF CONS	CAPACITY** 1000 AF FC	PAGE NO
			WHITE RIVER BASIN						
Beaver	White	LRD	AR	66	1120.0	1130.0	1652	300	1
Table Rock	White	LRD	AR/MO	58	915.0	931.0	2702	760	1
Bull Shoals	White	LRD	AR/MO	52	654.0	695.0	3048	2360	2
Norfork	North Fork	LRD	AR/MO	45	552.0	580.0	1251	732	2
Clearwater	Black	LRD	MO	48	494.0	567.0	22	391	3
Greers Ferry	Little Red	LRD	AR	62	461.0	487.0	1911	934	3
			ARKANSAS RIVER BASIN						
Pueblo	Arkansas	AD*	CO	74	4880.6	4898.7	264	93	4
Trinidad	Purgatorie R	AD	CO	78	6226.4	6260.0	64	58	4
John Martin	Arkansas	AD	CO	51	3851.0	3870.0	351	270	5
Cheney	N F Ninnescah	TD*	KS	64	1421.6	1429.0	167	81	5
Eldorado	Walnut	TD	KS	80	1339.0	1347.5	157	79	6
Kaw	Arkansas	TD	OK/KS	76	1010.0	1044.5	429	919	6
Great Salt Plains	Salt Fork Ark	TD	OK	41	1125.0	1138.5	31	240	7
Keystone	Arkansas	TD	OK	64	723.0	754.0	618	1219	7
Heyburn	Polecat Cr	TD	OK	50	761.5	784.0	7	48	8
Toronto	Verdigris R	TD	KS	60	901.5	931.0	22	178	8
Fall River	Fall	TD	KS	49	948.5	987.5	24	235	9
Elk City	Elk	TD	KS	66	792.0	825.0	34	256	9
Big Hill	Big Hill Cr	TD	KS	81	858.0	867.5	27	13	10
Oologah	Verdigris R	TD	OK	63	638.0	661.0	553	966	10
Hulah	Caney	TD	OK/KS	51	733.0	765.0	36	258	11
Copan	L Caney	TD	OK/KS	80	710.0	732.0	43	184	11
Birch	Birch Creek	TD	OK	79	750.5	774.0	19	39	12
Skiatook	Hominy Creek	TD	OK	82	714.0	729.0	305	182	12
Newt Graham LD 18	Verdigris	TD	OK	70	532.0	-	24	0	13
Chouteau LD 17	Verdigris	TD	OK	70	511.0	-	23	0	13
Council Grove	Neosho R	TD	KS	65	1270.0	1289.0	38	76	14
Marion	Cottonwood R	TD	KS	68	1350.5	1358.5	86	60	14
John Redmon	Neosho R	TD	KS	64	1039.0	1068.0	82	563	15
Grand Lake	Neosho (Grand)	TD*	OK	40	745.0	755.0	1672	525	15
Lake Hudson	Neosho (Grand)	TD*	OK	64	619.0	636.0	200	244	16
Fort Gibson	Neosho (Grand)	TD	OK	52	554.0	582.0	365	919	16
Webbers Falls LD 16	Arkansas	TD	OK	70	490.0		165	0	17
Tenkiller Ferry	Illinois R	TD	OK	52	632.0	667.0	654	577	17
Conchas	Canadian R	AD	NM	39	4201.0	4218.0	330	198	18
Meredith	Canadian R	TD*	TX	65	2941.3	2965.0	945	463	18
Thunderbird	Little R	TD*	TX	65	1039.0	1049.4	120	77	19
Optima	N Canadian R	TD	OK	78	2763.5	2779.0	129	101	19
Fort Supply	Wolf Cr	TD	OK	42	2004.0	2028.0	14	87	20
Canton	N Canadian R	TD	OK	48	1615.2	1638.0	116	268	20
Eufaula	Canadian R	TD	OK	64	585.0	597.0	2329	1470	21
R S Kerr LD 15	Arkansas	TD	OK	70	460.0	-	494	0	21
W D Mayo LD 14	Arkansas	TD	OK	70	413.0	-	16	0	21
Wister	Poteau R	TD	OK	49	471.6	502.5	27	400	22
LD 13	Arkansas	LRD	AR/OK	69	392.0	-	54	0	22
Ozark-J T LD 12	Arkansas	LRD	AR	69	372.0	-	148	0	23
Dardanelle LD 10	Arkansas	LRD	AR	64	338.0	-	486	0	24
Blue Mountain	Petit Jean	LRD	AR	47	384.0	419.0	25	233	24
LD 9	Arkansas	LRD	AR	69	287.0	-	65	0	25
Toad Suck Ferry LD 8	Arkansas	LRD	AR	69	265.0	-	35	0	25
Nimrod	Fourche La Fave	LRD	AR	42	342.0	373.0	29	307	26
Murray LD 7	Arkansas	LRD	AR	69	249.0	-	87	0	26
D D Terry LD 6	Arkansas	LRD	AR	68	231.0	-	50	0	27
LD 5	Arkansas	LRD	AR	68	213.0	-	65	0	27
LD 4	Arkansas	LRD	AR	68	196.0	-	70	0	28
LD 3	Arkansas	LRD	AR	68	182.0	-	46	0	28
LD 2	Arkansas	LRD	AR	67	162.0	-	110	0	29
LD 1	Arkansas	LRD	AR	67	142.0	-	2	0	29

* Section 7 Flood Control Projects
**Includes dead storage, conservation, water supply, power, irrigation, etc.

RED RIVER BASIN									
Altus	N F Red	TD*	OK	46	1559.0	1562.0	141	21	30
Tom Steed	W Otter Creek	TD*	OK	75	1411.0	1414.0	96	20	30
Lake Kemp	Wichita R	TD*	TX	77	1144.0	1156.0	299	225	31
Waurika	Beaver Creek	TD	OK	78	951.4	962.5	203	140	31
Foss	Washita	TD*	OK	61	1562.0	1668.6	256	181	32
Fort Cobb	Cobb Creek	TD*	OK	59	1342.0	1354.8	78	64	32
Arbuckle	Rock Creek	TD*	OK	67	872.0	885.3	72	36	33
Lake Texoma	Red	TD	TX/OK	45	617.3	640.0	2836	2660	33
Pat Mayse	Sanders Creek	TD	TX	68	451.0	460.5	124	65	34
Clayton	Jack Fork Creek	TD	OK	84	599.0	607.0	302	128	34
Hugo	Kiamichi R	TD	OK	74	404.5	437.5	157	809	35
Pine Creek	Little R	TD	OK	69	443.5	480.0	78	388	35
Broken Bow	Mountain Fork	TD	OK	69	599.5	627.5	919	450	36
DeQueen	Rolling Fork	LRD	AR	77	437.0	473.5	35	101	37
Gillham	Cossatot	LRD	AR	76	502.0	569.0	33	189	37
Dierks	Saline R	LRD	AR	76	526.0	557.5	30	67	38
Millwood	Little R	LRD	AR	66	259.2	287.0	207	1653	38
Wright Patman	Sulphur River	FWD	TX	56	220.0	259.5	143	2509	39
Lake O the Pines	Cypress Creek	FWD	TX	60	228.5	249.5	251	580	39
NECHES RIVER BASIN									
Sam Rayburn	Angelina R	FWD	TX	65	164.4	173.0	2898	1009	40
B A Steinhagen	Neches R	FWD	TX	51	81.0	83.0	70	24	40
TRINITY RIVER BASIN									
Benbrook	Clear Fork	FWD	TX	52	694.0	724.0	88	170	41
Lewisville	Elm Fork	FWD	TX	54	515.0	532.0	465	525	41
Grapevine	Denton Cr	FWD	TX	52	535.0	560.0	189	248	42
Lavon	East Fork	FWD	TX	77	492.0	503.5	457	277	42
Navarro Mills	Richland Cr	FWD	TX	68	424.5	443.0	63	149	43
Bardwell	Waxahachie Cr	FWD	TX	65	421.0	439.0	55	85	43
SAN JACINTO RIVER BASIN									
Barker	Buffalo Bayou	GD	TX	45	-	107.0	0	207	44
Addicks	Buffalo Bayou	GD	TX	48	-	114.0	0	205	44
BRAZOS RIVER BASIN									
Whitney	Brazos	FWD	TX	51	533.0	571.0	627	1372	45
Waco	Bosque	FWD	TX	65	455.0	500.0	153	574	45
Proctor	Leon R	FWD	TX	63	1162.0	1197.0	59	315	46
Belton	Leon R	FWD	TX	54	594.0	631.0	458	640	46
Stillhouse H	Lampasas R	FWD	TX	68	622.0	666.0	236	395	47
Georgetown	N F San Gabriel	FWD	TX	79	791.0	834.0	37	93	47
Granger	San Gabriel	FWD	TX	79	504.0	524.0	66	179	48
Somerville	Yegua Cr	FWD	TX	67	238.0	258.0	160	347	48
COLORADO RIVER BASIN									
Twin Buttes	S&M Concho R	FWD*	TX	63	1940.2	1969.1	186	454	49
O C Fisher	N Concho R	FWD	TX	52	1908.0	1938.5	119	277	49
Hords Cr	Hords Cr	FWD	TX	48	1900.0	1920.0	9	17	50
Marshall Ford	Colorado r	FWD*	TX	40	681.0	714.0	1172	780	50
GUADALUPE RIVER BASIN									
Canyon	Guadalupe R	FWD	TX	64	909.0	943.0	386	355	51
RIO GRANDE BASIN									
Platoro	Conejos R	AD*	CO	51	10027.5	10034.0	54	6	52
Abiquiu	Rio Chama	AD	NM	63	-	6283.5	0	568	52
Cochiti	Rio Grande	AD	NM	75	5321.45	5460.5	47	539	53
Galisteo	Galisteo Cr	AD	NM	70	-	5608.0	0	90	53
Jemez Canyon	Jemez R	AD	NM	53	5160.0	5232.0	2	104	54
Santa Rosa	Pecos R	AD	NM	80	4776.5	4797.0	267	182	54
Sumner	Pecos R	AD*	NM	37	4261.0	4282.0	47	86	55
Two Rivers	Rio Hondo	AD	NM	63	-	4032.0	0	168	55

*Section 7 Flood Control Projects

**Includes dead storage, conservation, water supply, power, irrigation, etc.

ALPHABETICAL INDEX

SUMMARY OF LAKE CONDITIONS FOR WATER YEAR 1981

WHITE RIVER BASIN

BEAVER LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1968 thru 1981	48.1	107.9	100.6	74.0	96.1	194.7	164.6	126.7	85.3	26.5	15.0	33.3	1,072.8
WY 1981	16.6	6.8	10.7	5.5	27.5	69.8	58.8	149.9	170.6	28.6	64.6	6.1	615.5
Releases (1,000 AC. FT.)													
Avg 1968 thru 1981	29.9	60.6	71.1	87.3	85.3	80.4	104.6	100.2	87.6	91.0	92.2	57.7	1,048.3
WY 1981	3.4	28.5	8.8	1.9	1.5	1.4	2.0	8.1	77.8	102.9	81.6	72.8	390.7
Basin Rainfall (inches)													
Avg 1968 thru 1981	4.1	3.6	3.0	1.8	2.1	4.1	3.9	4.5	4.1	2.8	2.7	4.0	40.7
WY 1981	4.0	1.8	2.0	0.8	3.2	3.0	3.0	8.3	6.0	3.6	6.8	1.6	22.3
Deviation	-0.1	-1.8	-1.0	-1.0	+1.1	-1.1	-0.9	+3.8	+1.9	+0.8	+4.1	-2.4	-18.4
Pool Elevation													
End of Month	1,107.44	1,106.25	1,106.09	1,105.98	1,106.78	1,109.23	1,111.05	1,116.22	1,119.11	1,115.83	1,114.75	1,111.86	
Maximum	1,107.74	1,107.44	1,106.27	1,106.10	1,106.78	1,109.23	1,111.05	1,116.22	1,119.77	1,119.27	1,116.33	1,114.75	
Minimum	1,107.17	1,106.14	1,105.93	1,105.94	1,105.92	1,106.78	1,109.23	1,111.05	1,116.22	1,115.83	1,114.75	1,111.86	
Pool Content EOM (1,000 AC. FT.)	1,323.5	1,294.9	1,291.1	1,288.4	1,307.6	1,367.2	1,412.7	1,547.7	1,627.1	1,537.2	1,508.4	1,433.2	

TABLE ROCK LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1961 thru 1981	98.0	216.5	209.1	201.3	198.3	363.4	391.1	378.6	222.9	141.8	114.8	104.9	2,640.9
WY 1981	19.2	42.5	37.5	16.8	30.0	52.1	75.3	177.2	301.1	179.1	241.6	87.6	1,260.0
Releases (1,000 AC. FT.)													
Avg 1961 thru 1981	118.7	188.0	211.3	217.0	198.3	256.7	298.7	332.6	206.5	211.6	162.2	120.3	2,521.9
WY 1981	33.7	83.4	38.7	45.1	56.7	49.5	15.5	20.6	43.2	66.8	61.4	46.8	561.4
Intervening Basin Rainfall (inches) [2]													
Avg 1968 thru 1981	4.3	3.9	3.1	1.7	1.7	4.1	4.1	4.4	4.8	3.0	3.3	4.2	42.6
WY 1981	3.4	1.6	1.2	0.5	1.4	1.6	3.3	5.9	6.3	4.7	7.6	0.2	37.7
Deviation	-0.9	-2.3	-1.9	-1.2	-0.3	-2.5	-0.8	+1.5	+1.5	+1.7	+4.3	-4.0	-4.9
Pool Elevation													
End of Month	897.95	896.49	896.24	895.15	894.08	893.81	895.20	899.38	905.96	908.30	912.26	912.87	
Maximum	898.71	897.96	896.99	896.27	895.15	894.39	895.20	899.38	905.96	908.30	912.26	912.89	
Minimum	897.95	896.49	896.19	895.15	893.94	893.56	893.81	895.20	899.38	905.96	908.25	912.04	
Pool Content EOM (1,000 AC. FT.)	2,042.3	1,992.7	1,984.2	1,948.0	1,912.6	1,903.8	1,949.6	2,092.3	2,333.5	2,425.0	2,585.9	2,611.5	

BULL SHOALS LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1953 thru 1981	141.4	253.9	280.1	265.7	300.0	476.2	511.6	588.2	342.2	387.9	194.7	161.2	3,903.1
WY 1981	42.9	99.2	48.0	46.0	83.4	80.1	62.5	122.2	110.9	98.4	129.8	54.3	977.7
Releases (1,000 AC. FT.)													
Avg 1953 thru 1981	220.9	196.3	242.6	301.6	266.0	298.9	362.7	402.9	310.9	394.3	341.0	248.0	3,586.1
WY 1981	55.7	95.3	153.6	206.1	133.9	137.8	12.0	24.3	48.1	106.5	97.9	55.7	1,126.9
Intervening Basin Rainfall (inches) [2]													
Avg 1968 thru 1981	3.5	4.1	2.6	1.7	1.8	3.6	4.3	4.2	3.2	3.5	3.2	4.3	40.0
WY 1981	2.3	2.5	0.0	0.4	1.2	1.1	4.1	5.0	4.2	3.9	5.4	0.1	30.2
Deviation	-1.2	-1.6	-2.6	-1.3	-0.6	-2.5	-0.2	+0.8	+1.0	0.4	+2.2	-4.2	-19.8
Pool Elevation													
End of Month	648.03	647.78	644.93	640.57	638.90	636.91	637.72	639.77	640.80	639.94	640.15	639.62	
Maximum	648.76	648.06	647.80	644.93	640.72	638.94	637.75	639.77	640.99	640.86	640.72	640.15	
Minimum	648.03	647.58	644.93	640.48	638.90	636.73	636.91	637.64	639.77	639.94	639.86	639.62	
Pool Content EOM (1,000 AC. FT.)	2,785.3	2,774.8	2,656.1	2,482.5	2,418.2	2,343.1	2,373.5	2,451.3	2,491.6	2,457.7	2,465.9	2,445.6	

NORFORK LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1946 thru 1981	48.1	86.4	99.3	119.8	124.1	182.3	192.7	193.7	104.7	77.1	48.6	46.5	1,323.3
WY 1981	33.2	33.1	33.9	32.8	37.8	57.9	52.6	86.1	64.1	40.5	38.6	19.0	529.6
Releases (1,000 AC. FT.)													
Avg 1946 thru 1981	68.4	69.6	89.3	117.6	114.7	54.0	127.1	63.4	109.6	119.6	111.4	85.3	1,130.0
WY 1981	17.0	29.6	8.5	3.5	2.9	5.0	2.6	34.1	79.1	47.4	75.6	19.0	324.3
Basin Rainfall (inches)													
Avg 1946 thru 1981	2.8	3.5	2.9	2.5	2.7	3.7	4.1	5.0	4.0	3.7	3.0	3.5	41.4
WY 1981	2.9	1.7	0.8	0.9	1.8	2.7	3.0	5.1	4.2	3.4	3.9	0.9	31.3
Deviation	+0.1	-1.8	-2.1	-1.6	-0.9	-1.0	-1.1	+0.1	+0.2	-0.3	+0.9	-2.6	-10.1
Pool Elevation													
End of Month	540.84	540.60	541.55	542.67	544.04	546.17	548.03	550.03	548.84	547.93	545.61	542.16	
Maximum	540.88	540.92	541.55	542.67	544.04	546.17	548.03	550.21	550.05	548.93	547.97	545.63	
Minimum	540.13	540.30	540.60	541.55	542.67	544.04	546.17	548.01	548.51	547.93	545.61	542.16	
Pool Content EOM (1,000 AC. FT.)	1,022.5	1,018.0	1,036.1	1,057.7	1,084.8	1,127.7	1,166.0	1,208.4	1,183.0	1,163.9	1,116.2	1,047.9	

WHITE RIVER BASIN

CLEARWATER LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1949 thru 1981	20.0	39.1	48.5	54.0	53.6	91.1	91.2	76.6	34.7	27.5	16.5	19.6	572.4
WY 1981	12.3	14.8	16.7	14.1	17.9	19.0	26.4	93.3	50.9	61.2	19.9	12.4	358.9
Releases (1,000 AC. FT.)													
Avg 1949 thru 1981	20.5	32.1	48.5	48.6	56.1	76.9	88.8	74.7	50.0	32.3	27.0	24.3	579.8
WY 1981	17.6	14.8	16.7	13.7	17.9	16.0	30.5	21.0	109.0	38.2	49.1	16.7	361.2
Basin Rainfall (inches)													
Avg 1949 thru 1981	2.6	3.6	3.1	2.6	2.7	4.1	4.2	4.7	3.6	3.8	3.5	3.4	41.9
WY 1981	2.9	2.0	0.9	0.8	2.6	2.0	2.8	8.0	4.8	8.2	3.3	1.1	39.4
Deviation	+0.3	-1.6	-2.2	-1.8	-0.1	-2.1	-1.4	+3.3	+1.2	+4.4	-0.2	-2.3	-2.5
Pool Elevation													
End of Month	494.33	494.17	494.10	494.24	494.13	495.74	494.05	520.51	500.92	509.79	496.85	494.09	
Maximum	497.65	494.33	494.39	494.24	494.48	495.74	497.77	521.78	520.58	510.20	509.78	497.16	
Minimum	497.38	494.05	494.07	494.09	494.05	494.02	494.05	494.03	500.92	497.38	496.61	494.05	
Pool Content EOM (1,000 AC. FT.)	22.5	22.2	22.1	22.3	22.1	24.8	22.0	93.7	34.6	56.7	26.8	22.1	

GREERS FERRY LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1965 thru 1981	35.8	99.1	157.5	119.5	135.4	246.4	214.0	151.7	63.1	12.0	8.7	33.8	1,277.0
WY 1981	6.9	11.8	33.7	7.1	99.3	150.4	91.1	89.8	77.1	14.8	13.5	0.0	595.5
Releases (1,000 AC. FT.)													
Avg 1965 thru 1981	41.8	49.4	82.1	135.6	113.9	118.2	123.7	130.4	93.5	109.3	99.9	58.2	1,156.0
WY 1981	5.2	3.6	5.0	2.3	1.9	5.0	8.8	63.3	112.5	45.9	67.8	67.6	388.9
Basin Rainfall (inches)													
Avg 1964 thru 1981	3.5	4.2	4.1	2.7	2.9	5.1	4.7	5.2	3.8	3.6	3.2	5.1	48.1
WY 1981	3.7	2.3	1.5	0.7	3.9	4.3	3.1	5.6	3.7	4.1	4.0	1.2	38.1
Deviation	+0.2	-1.9	-2.6	-2.0	+1.0	-0.8	-1.6	+0.4	-0.1	+0.5	+1.8	-3.9	-10.0
Pool Elevation													
End of Month	449.88	449.94	450.78	450.75	453.93	458.46	460.72	461.22	459.70	458.23	456.01	453.10	
Maximum	450.13	449.94	450.82	450.79	453.93	458.46	460.72	461.36	461.49	459.78	458.23	456.01	
Minimum	449.74	449.79	449.91	450.70	450.75	453.93	458.46	460.69	459.70	458.23	456.01	453.10	
Pool Content EOM (1,000 AC. FT.)	1,586.6	1,581.3	1,604.8	1,604.0	1,695.0	1,831.3	1,901.7	1,917.4	1,869.7	1,824.1	1,757.3	1,670.9	

PUEBLO DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg 1894 thru 1981	22.0	22.6	21.3	20.0	16.5	15.7	24.0	67.8	131.1	88.5	57.2	26.2	512.9
FY 1981	19.2	28.2	26.2	18.6	19.1	15.0	9.1	19.3	52.4	39.0	44.8	30.3	321.2
Releases (1000 Ac. Ft.)													
Avg 1966 thru 1981	7.5	7.1	4.8	4.3	3.8	12.5	20.0	29.2	65.3	44.2	25.5	10.2	234.4
FY 1981	25.3	10.3	4.0	4.4	12.7	15.2	23.6	31.5	22.6	54.1	45.0	28.0	276.7
Rainfall (Inches)													
Avg 19 thru 19	.77	.44	.46	.33	.42	.71	1.36	1.76	1.30	1.95	1.79	.80	12.09
FY 19	0	.32	.02	.02	.14	2.07	.06	.89	1.28	2.03	3.89	1.10	11.82
Pool Elevation (EOM)													
Maximum	4801.14	4810.69	4822.20	4828.48	4831.36	4830.90	4824.32	4817.94	4808.90	4797.98	4797.37	4798.69	
Minimum	4801.14	4810.69	4822.20	4828.48	4831.36	4832.91	4830.80	4823.92	4818.01	4808.73	4800.26	4799.25	4832.91
	4799.81	4801.20	4810.69	4822.20	4828.48	4830.90	4824.32	4817.82	4808.36	4796.54	4797.37	4797.08	4796.54
Pool Content (EOM) (1000 Ac. Ft.)	36.4	51.3	73.4	87.5	94.5	93.4	78.0	64.7	48.3	32.0	31.2	33.0	

TRINIDAD LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg thru	1.3	1.4	1.1	.8	.7	.8	2.1	14.8	1.6	10.1	4.5	1.7	53.9
FY 1981	1.0	.2	2.1	.7	.7	1.2	1.2	2.3	3.8	8.3	26.9	64.2	112.6
Releases													
Avg 19 thru 19	1.2	.7	.5	.5	.6	.5	.7	3.8	11.7	11.7	7.2	2.8	41.9
FY	1.2	.2	0	0	.1	0	4.7	9.6	7.8	7.1	10.2	57.6	98.5
Rainfall (Inches)													
Avg 19 thru 19	1.03	.89	.60	1.04	1.15	1.11	.71	3.30	1.80	1.32	2.62	1.29	15.86
FY	.17	.88	.15	.01	.45	2.13	.65	2.88	1.59	4.61	6.35	1.89	20.32
Pool elevation (EOM)													
Maximum	6206.51	6203.31	6208.15	6208.62	6209.11	6209.94	6206.02	6197.72	6192.10	6193.06	6210.16	6209.02	
Minimum	6207.00	6207.31	6208.15	6208.62	6209.11	6209.94	6210.10	6205.74	6198.20	6194.80	6210.16	6212.94	6212.94
	6206.09	6206.55	6207.33	6208.16	6208.62	6209.13	6206.02	6197.45	6192.10	6191.78	6192.79	6209.02	6191.78
Pool Content (1000 Ac. ft.)	39.7	40.5	41.4	41.9	42.4	43.3	39.2	31.5	26.9	30.7	47.0	45.8	

JOHN MARTIN RES.

Inflows (1000 Ac. Ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Avg 1943 thru 1981	6.7	6.1	6.3	7.5	6.8	6.9	7.1	14.9	47.4	36.4	27.3	8.3	181.7
FY 1981	5.5	7.4	11.9	11.1	7.6	7.5	2.6	5.5	15.2	17.9	55.1	17.4	164.7
Releases (1000 Ac. Ft.)													
Avg 1961 thru 1981	13.0	6.2	4.6	4.3	3.8	3.5	23.6	32.8	48.0	40.3	42.6	19.9	242.6
FY 1981	15.1	.6	.1	.1	.1	.1	17.5	20.4	19.2	35.9	35.9	30.0	175.0
Rainfall (Inches)													
Avg 1943 thru 1981	.73	.42	.23	.24	.20	.56	1.01	2.11	1.50	1.88	1.83	.79	11.50
FY 1981	0	.39	0	0	.03	.51	.25	2.17	.30	1.94	1.55	.49	7.63
Pool Elevation (EOM)	3803.97	3804.88	3809.18	3811.96	3812.60	3815.00	3810.80	3806.07	3804.04	3796.18	3803.50	3798.21	
Maximum	3807.10	3805.88	3809.18	3811.96	3813.60	3815.00	3815.01	3810.54	3806.33	3806.33	3807.41	3802.85	3815.01
Minimum	3803.79	3803.97	3806.11	3809.28	3812.00	3813.65	3810.80	3805.07	3804.04	3796.18	3795.70	3798.21	3796.18
Pool Content (EOM) (1000 Ac. Ft.)	35.4	41.5	52.9	63.3	69.9	75.8	58.9	40.1	35.6	15.6	31.0	17.6	

CHENEY RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1938 THRU 1961	8.54	6.26	5.85	5.76	7.98	11.14	13.63	22.35	20.15	11.91	5.46	7.54	126.6
FY 1981	2.59	0.03	5.46	4.75	3.19	6.49	6.79	17.50	10.55	4.36	4.78	6.37	72.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	1.45	20.10	3.54	4.18	4.18	9.26	11.53	17.15	11.44	0.50	2.12	2.32	87.8
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	4.82	0.	0.	13.94	18.8
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.12	1.30	0.90	0.66	0.92	1.54	2.50	3.60	4.10	3.14	2.97	3.09	26.84
FY 1981	1.10	0.06	1.33	0.	0.04	1.30	1.09	6.54	3.83	3.42	0.92	1.41	21.04
DEVIATION	-1.02	-1.24	0.43	-0.66	-0.88	-0.24	-1.41	2.94	-0.27	0.28	-2.05	-1.68	-5.80
POOL ELEVATION													
END OF MONTH	1419.14	1419.15	1419.52	1419.79	1419.97	1420.44	1420.52	1421.76	1421.48	1421.09	1420.77	1419.27	
MAXIMUM	1419.45	1419.23	1419.52	1419.79	1419.98	1420.45	1420.55	1421.76	1421.96	1421.50	1421.10	1420.94	
MINIMUM	1419.10	1419.12	1419.09	1419.52	1419.78	1419.97	1420.35	1420.45	1421.38	1421.02	1420.53	1419.27	
POOL CONTENT-EOM (1000AC.FT)	144.65	144.74	148.00	150.37	151.96	156.25	156.98	168.59	165.93	162.23	159.27	145.80	

ARKANSAS RIVER BASIN

ELDORADO	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1921 THRU 1978	5.00	4.40	2.80	2.70	2.80	6.20	10.20	11.80	14.40	7.40	3.40	5.50	76.6
FY 1981	0.11	0.01	0.17	0.06	0.05	0.04	0.02	1.72	1.72	0.89	0.22	0.13	5.2
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.45	1.66	1.12	0.85	0.98	1.87	2.97	4.40	4.74	3.71	3.19	3.92	31.86
FY 1981	2.86	0.06	1.98	0.	0.08	2.21	0.79	5.71	5.77	4.42	3.96	1.15	28.99
DEVIATION	0.41	-1.60	0.86	-0.85	-0.90	0.34	-2.18	1.31	1.03	0.71	0.77	-2.77	-2.87
POOL ELEVATION													
END OF MONTH	1279.20	1279.00	1279.10	1279.10	1279.10	1279.00	1279.00	1280.10	1280.60	1289.10	1290.26	1289.79	
MAXIMUM	1279.80	1279.30	1279.90	1279.10	1279.10	1279.20	1279.30	1281.60	1281.00	1289.63	1290.42	1290.26	
MINIMUM	1279.00	1279.00	1279.00	1279.10	1279.00	1279.00	1279.00	1279.00	1279.30	1280.60	1289.02	1289.79	
POOL CONTENT-EOM													
(1000AC.FT)	0.26	0.25	0.26	0.26	0.26	0.25	0.25	0.30	0.33	1.17	1.36	1.28	

ARKANSAS RIVER BASIN

KAW LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1974	172.70	119.30	88.10	86.70	92.60	164.30	253.70	301.10	335.90	246.10	140.50	145.90	2146.9
FY 1981	18.45	17.85	28.16	24.20	22.91	30.62	27.77	107.21	143.15	100.86	83.60	41.55	646.3
RELEASES(1000AC.FT.)													
AVG 1977 THRU 1981	43.06	171.36	63.29	56.22	79.74	198.65	223.27	184.80	270.09	170.40	54.94	127.24	1643.1
FY 1981	10.45	11.62	25.15	66.00	16.94	12.30	8.33	76.02	134.04	131.98	80.34	25.42	598.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.40	1.64	1.12	0.84	1.02	1.80	2.92	4.31	4.50	3.60	3.20	3.70	31.05
FY 1981	1.67	0.23	1.77	0.	0.14	1.34	0.97	6.41	4.80	3.03	3.02	1.91	25.29
DEVIATION	-0.73	-1.41	0.65	-0.84	-0.88	-0.46	-1.95	2.10	0.30	-0.57	-0.18	-1.79	-5.76
POOL ELEVATION													
END OF MONTH	1009.85	1009.97	1010.07	1007.53	1007.72	1008.42	1009.11	1010.66	1010.49	1008.04	1007.69	1008.33	
MAXIMUM	1009.90	1010.10	1010.47	1010.18	1007.77	1008.49	1009.13	1011.53	1010.88	1010.62	1008.24	1008.33	
MINIMUM	1009.57	1009.85	1009.90	1007.45	1007.49	1007.72	1008.42	1009.01	1010.01	1008.04	1007.19	1007.50	
POOL CONTENT-EOM													
(1000AC.FT)	426.08	428.10	429.81	388.07	391.08	402.35	413.65	440.02	437.08	396.15	390.60	400.88	

ARKANSAS RIVER BASIN

GREAT SALT PLAINS LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1963	22.59	11.25	8.29	8.80	13.22	14.98	27.30	59.79	48.45	25.40	24.35	19.16	283.6
FY 1981	0.71	0.02	7.04	4.86	2.52	9.66	4.69	50.72	22.80	8.90	10.35	39.85	162.1
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	1.83	14.23	4.77	5.58	6.88	20.26	20.24	52.30	38.71	7.80	4.82	12.50	189.9
FY 1981	0.37	0.36	0.37	0.23	0.15	4.99	2.44	37.99	24.34	2.35	5.00	33.11	111.7
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.87	1.19	0.85	0.66	0.91	1.45	2.37	3.61	3.59	2.53	2.96	2.46	24.45
FY 1981	1.08	0.05	1.46	0.01	0.07	1.22	0.23	6.19	3.17	3.85	1.97	2.56	21.86
DEVIATION	-0.79	-1.14	0.61	-0.65	-0.84	-0.23	-2.14	2.58	-0.42	1.32	-0.99	0.10	-2.59
POOL ELEVATION													
END OF MONTH	1123.42	1123.43	1124.22	1124.78	1125.01	1125.22	1124.94	1125.89	1125.11	1125.12	1125.05	1125.16	
MAXIMUM	1123.75	1123.44	1124.22	1124.78	1125.09	1125.40	1125.47	1126.64	1126.01	1125.23	1125.33	1126.38	
MINIMUM	1123.34	1123.32	1123.42	1124.22	1124.69	1125.00	1124.94	1124.89	1125.05	1124.75	1125.02	1125.05	
POOL CONTENT-EOM													
(1000AC.FT)	19.10	19.17	25.07	29.63	31.51	33.46	30.93	39.68	32.44	32.53	31.88	32.90	

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ARKANSAS RIVER BASIN

KEYSTONE LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1970	398.60	345.60	172.30	157.00	178.00	259.20	539.30	776.40	789.90	511.30	307.50	339.60	4674.7
FY 1981	49.98	23.60	49.19	74.38	39.67	47.74	36.99	205.54	296.67	216.10	136.86	108.10	1284.8
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	80.85	202.50	107.54	85.28	95.70	225.29	343.96	500.80	553.99	352.95	181.57	221.07	2951.5
FY 1981	30.92	24.66	30.45	25.64	26.80	21.61	28.07	124.50	291.38	201.83	152.79	168.44	1127.1
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.42	1.68	1.18	0.95	1.11	1.81	2.90	4.37	4.18	3.20	3.03	3.50	30.33
FY 1981	1.79	0.39	1.54	0.02	0.48	1.98	1.06	5.65	4.75	3.85	2.13	2.70	26.34
DEVIATION	-0.63	-1.29	0.36	-0.93	-0.63	0.17	-1.84	1.28	0.57	0.65	-0.90	-0.80	-3.99
POOL ELEVATION													
END OF MONTH	717.81	717.52	718.36	720.42	720.66	721.28	721.32	724.12	723.89	723.84	722.83	719.81	
MAXIMUM	718.04	717.96	718.46	720.42	720.78	721.39	721.53	724.12	724.80	724.77	724.35	722.89	
MINIMUM	716.80	717.46	717.26	718.33	720.24	720.64	721.08	721.13	723.44	723.21	722.83	719.81	
POOL CONTENT-EOM													
(1000AC.FT)	494.57	488.42	506.56	553.85	559.54	574.54	575.54	647.70	641.50	640.18	613.65	539.49	

ARKANSAS RIVER BASIN

HEYBURN LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1929 THRU 1955	2.31	2.25	1.36	1.16	1.99	2.56	5.91	8.78	6.18	2.00	1.53	4.54	40.6
FY 1981	0.13	0.11	0.10	0.02	0.10	0.51	0.02	1.41	11.84	0.73	0.48	0.76	16.2
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.08	0.13	0.03	0.07	0.31	0.95	2.28	8.32	5.36	0.54	0.07	0.66	19.3
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	9.82	0.14	0.11	0.23	10.3
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.94	2.25	1.51	1.40	1.54	2.32	3.53	4.88	4.28	3.22	3.05	3.71	34.63
FY 1981	1.11	0.93	1.52	0.05	1.84	3.15	1.43	5.90	5.41	4.89	3.90	3.44	33.57
DEVIATION	-1.83	-1.32	0.01	-1.35	0.30	0.83	-2.10	1.02	1.13	1.67	0.85	-0.27	-1.06
POOL ELEVATION													
END OF MONTH	759.06	758.81	758.64	758.39	758.21	758.60	758.04	759.72	761.63	761.67	761.44	761.43	
MAXIMUM	759.35	759.06	758.86	758.64	758.39	758.66	758.60	759.72	766.85	761.67	761.75	761.91	
MINIMUM	759.06	758.81	758.64	758.39	758.20	758.21	758.04	757.95	759.72	761.14	761.29	761.25	
POOL CONTENT-EOM													
(1000AC.FT)	4.79	4.62	4.51	4.35	4.23	4.49	4.12	5.23	6.76	6.79	6.58	6.57	

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ARKANSAS RIVER BASIN

TORONTO LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1964	22.47	16.27	9.84	10.87	11.06	27.08	48.51	43.84	47.62	37.14	9.37	22.73	306.8
FY 1981	0.27	0.09	0.77	0.15	0.08	0.45	0.37	17.49	45.30	11.12	10.01	25.83	111.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	4.25	15.60	4.24	1.33	9.39	23.26	31.09	20.82	35.20	26.39	6.41	9.59	187.6
FY 1981	0.37	0.36	0.25	0.06	0.06	0.06	0.06	5.48	22.76	29.88	4.71	31.57	95.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.75	2.00	1.32	1.04	1.06	2.35	3.35	4.73	5.10	3.96	3.38	4.45	35.49
FY 1981	2.62	0.33	1.90	0.11	0.20	1.83	0.62	7.82	8.78	3.91	6.94	1.44	36.50
DEVIATION	-0.13	-1.67	0.58	-0.93	-0.86	-0.52	-2.73	3.09	3.68	-0.05	3.56	-3.01	1.01
POOL ELEVATION													
END OF MONTH	897.41	897.11	897.34	897.34	897.32	897.39	897.09	901.95	908.68	902.92	904.53	902.33	
MAXIMUM	897.77	897.41	897.38	897.34	897.35	897.41	897.39	903.11	908.68	908.68	904.53	908.52	
MINIMUM	897.41	897.11	897.05	897.30	897.31	897.26	897.09	896.98	901.95	902.42	902.44	902.33	
POOL CONTENT-EOM													
(1000AC.FT)	12.33	11.81	12.21	12.21	12.17	12.29	11.77	23.08	46.11	25.93	30.90	24.19	

ARKANSAS RIVER BASIN

FALL RIVER LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1964	15.86	12.40	7.05	7.98	8.39	19.49	36.98	35.80	33.96	20.12	6.66	14.31	219.0
FY 1981	0.34	0.07	0.55	0.01	0.02	0.12	0.22	11.48	19.72	[illegible]	2.49	0.26	39.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	2.58	10.19	2.69	1.65	5.98	16.78	22.79	27.81	30.26	[illegible]	4.85	4.60	166.0
FY 1981	0.37	0.36	0.37	0.28	0.06	0.06	0.06	0.13	3.81	15.47	1.52	0.30	22.8
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.64	1.72	1.24	0.93	1.04	2.10	3.19	4.45	4.86	3.80	3.16	4.18	33.31
FY 1981	2.97	0.36	2.03	0.11	0.22	1.76	0.80	6.49	9.47	3.02	4.91	1.25	33.39
DEVIATION	0.33	-1.36	0.79	-0.82	-0.82	-0.34	-2.39	2.04	4.61	-0.78	1.75	-2.93	0.08
POOL ELEVATION													
END OF MONTH	944.22	943.73	943.73	943.50	943.45	943.34	942.94	948.36	953.45	949.30	949.23	948.73	
MAXIMUM	944.59	944.22	943.88	943.73	943.52	943.47	943.37	948.36	953.57	953.56	949.93	949.23	
MINIMUM	944.12	943.73	943.54	943.49	943.40	943.11	942.64	942.73	948.36	949.29	949.23	948.72	
POOL CONTENT-EOM													
(1000AC.FT)	13.21	12.36	12.36	11.97	11.88	11.70	11.03	21.60	36.14	23.87	23.69	22.46	

ARKANSAS RIVER BASIN

ELK CITY LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1964	20.42	14.25	6.99	8.31	8.20	19.04	43.80	44.17	41.67	20.30	4.83	16.95	249.0
FY 1981	0.11	0.03	0.56	0.02	0.28	0.74	1.42	11.44	14.01	0.47	1.50	0.14	30.7
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	1.33	14.21	5.41	1.36	5.43	20.88	21.94	30.24	31.65	81.33	5.94	4.60	224.3
FY 1981	0.86	0.83	0.86	0.86	0.78	0.80	0.71	0.70	1.40	1.00	0.86	0.83	10.5
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.87	2.13	1.36	1.23	1.17	2.28	3.55	4.75	5.15	3.71	3.17	4.53	35.90
FY 1981	2.45	0.78	1.73	0.08	0.24	1.24	1.59	7.29	5.04	1.81	2.98	0.72	25.95
DEVIATION	-0.42	-1.35	0.37	-1.15	-0.93	-1.04	-1.96	2.54	-0.11	-1.90	-0.19	-3.81	-9.95
POOL ELEVATION													
END OF MONTH	792.47	792.09	791.88	791.50	791.29	791.06	790.89	793.58	796.20	795.42	795.13	794.40	
MAXIMUM	793.00	792.47	792.16	791.88	791.50	791.31	791.06	793.58	796.44	796.20	795.56	795.14	
MINIMUM	792.47	792.09	791.86	791.48	791.29	791.05	790.69	790.71	793.58	795.42	795.13	794.40	
POOL CONTENT-EOM													
(1000AC.FT)	30.69	29.34	28.61	27.34	26.64	25.98	25.33	34.80	45.67	42.26	41.02	38.02	

ARKANSAS RIVER BASIN

BIG HILL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1929 THRU 1978	1.69	1.19	0.75	1.05	0.67	1.69	2.30	3.13	3.60	1.73	0.27	1.33	19.4
FY 1981	0.02	0.01	0.02	0.	0.	0.00	0.02	0.09	0.16	0.04	0.12	0.02	0.5
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.14	2.43	1.52	1.46	1.34	2.54	3.82	5.18	5.67	3.81	3.36	4.90	39.17
FY 1981	3.38	0.89	1.52	0.14	0.72	1.59	1.10	5.09	5.81	2.03	6.43	1.33	30.03
DEVIATION	0.24	-1.54	0.	-1.32	-0.62	-0.95	-2.72	-0.09	0.14	-1.78	3.07	-3.57	-9.14
POOL ELEVATION													
END OF MONTH	808.90	808.78	808.90	808.70	808.75	808.85	809.05	811.15	813.09	812.76	814.35	813.99	
MAXIMUM	808.90	808.90	809.10	808.90	808.75	809.05	809.15	811.20	813.09	813.49	814.35	814.56	
MINIMUM	808.60	808.78	808.78	808.70	808.64	808.75	808.25	808.95	811.15	812.75	812.57	813.99	
POOL CONTENT-EOM													
(1000AC.FT)	0.06	0.05	0.06	0.05	0.05	0.06	0.06	0.13	0.23	0.21	0.32	0.29	

ARKANSAS RIVER BASIN

OOLOGAH LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1972	159.80	111.80	73.31	79.26	70.94	135.20	280.20	297.90	290.30	154.70	53.98	109.00	1816.4
FY 1981	8.92	1.20	6.33	1.96	6.17	8.49	25.67	58.56	92.73	66.92	28.66	43.34	348.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	27.28	118.45	32.78	12.36	34.53	157.11	191.41	147.09	145.13	345.45	40.80	51.50	1303.9
FY 1981	1.19	1.49	1.54	1.40	0.28	0.55	1.31	1.35	11.78	62.16	5.06	28.92	117.0
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.21	2.30	1.54	1.45	1.32	2.51	3.74	5.07	5.28	3.69	3.31	4.79	38.21
FY 1981	2.69	0.60	1.73	0.11	0.8[illegible]	1.66	1.98	5.66	5.89	2.95	5.15	1.44	30.75
DEVIATION	-0.52	-1.70	0.19	-1.34	-0.43	-0.85	-1.76	0.59	0.61	-0.74	1.84	-3.35	-7.46
POOL ELEVATION													
END OF MONTH	635.51	635.12	635.05	634.81	634.74	634.60	634.92	636.41	638.63	637.81	637.91	637.76	
MAXIMUM	635.85	635.53	635.43	635.05	635.09	635.07	635.03	636.43	638.68	638.67	638.22	638.30	
MINIMUM	635.36	635.12	634.98	634.81	634.62	634.52	634.22	634.66	636.41	637.67	637.76	637.71	
POOL CONTENT-EOM													
(1000AC.FT)	483.11	472.62	470.74	464.34	462.48	458.76	467.26	507.92	572.37	547.96	550.83	546.52	

ARKANSAS RIVER BASIN

HULAH LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1918 THRU 1965	32.89	19.51	8.17	7.00	6.95	17.26	41.27	48.09	38.39	34.39	15.25	32.09	301.3
FY 1981	0.17	0.	0.73	0.	0.21	0.85	0.78	7.82	3.96	0.85	2.25	0.36	18.0
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	4.80	20.58	9.92	1.57	7.30	14.55	24.30	35.93	30.20	35.02	9.62	3.62	197.4
FY 1981	0.58	0.45	0.47	0.	0.19	0.07	0.28	0.25	0.06	0.46	0.40	0.42	3.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.97	2.10	1.40	1.23	1.20	2.19	3.50	4.77	4.72	3.45	3.35	4.21	35.09
FY 1981	1.08	0.34	1.90	0.03	0.55	1.89	1.73	5.84	3.15	2.31	2.85	1.79	23.46
DEVIATION	-1.89	-1.76	0.50	-1.20	-0.65	-0.30	-1.77	1.07	-1.57	-1.14	-0.50	-2.42	-11.63
POOL ELEVATION													
END OF MONTH	728.64	728.16	727.97	727.57	727.17	726.80	726.07	728.64	729.36	728.55	728.44	727.58	
MAXIMUM	729.30	728.64	728.44	727.97	727.57	727.24	726.80	728.64	729.61	729.36	728.80	728.50	
MINIMUM	728.64	728.16	727.97	727.57	727.17	726.77	726.07	725.95	728.64	728.48	728.24	727.58	
POOL CONTENT-EOM													
(1000AC.FT)	17.69	16.46	15.98	15.06	14.14	13.35	11.86	17.69	19.61	17.46	17.18	15.09	

ARKANSAS RIVER BASIN

COPAN	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1936 THRU 1962	6.52	6.35	14.96	29.68	43.76	27.49	21.27	5.24	13.54	16.57	9.25	5.36	200.0
FY 1981	0.04	0.02	0.49	0.14	0.16	0.28	0.29	11.75	8.62	0.98	0.68	0.28	23.7
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.06	2.22	1.40	1.32	1.25	2.35	3.52	4.89	5.01	3.46	3.16	4.00	35.64
FY 1981	2.08	0.42	1.78	0.08	0.80	2.17	2.02	7.17	4.11	2.92	4.48	1.16	29.19
DEVIATION	-0.98	-1.80	0.38	-1.24	-0.45	-0.18	-1.50	2.28	-0.90	-0.54	1.32	-2.84	-6.45
POOL ELEVATION													
END OF MONTH	680.34	680.60	676.20	676.30	676.20	677.10	676.60	695.42	691.42	675.40	676.15	675.55	
MAXIMUM	680.34	680.60	679.96	676.30	676.40	677.60	677.80	697.30	697.02	691.42	682.75	680.60	
MINIMUM	679.21	680.34	675.30	676.10	676.20	676.10	676.10	676.20	691.42	675.40	675.38	675.55	
POOL CONTENT-EOM													
(1000AC.FT)	0.16	0.17	0.05	0.06	0.05	0.07	0.06	3.81	1.43	0.04	0.05	0.04	

ARKANSAS RIVER BASIN

BIRCH LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1936 THRU 1972	2.37	0.97	0.80	0.62	0.64	1.90	3.03	5.34	3.04	1.88	0.84	1.96	23.4
FY 1981	0.06	0.	0.12	0.	0.09	0.43	0.58	3.74	1.52	0.51	0.03	0.01	7.1
RELEASES(1000AC.FT.)													
AVG 1979 THRU 1981	0.23	0.19	0.17	0.19	0.18	0.79	1.73	2.77	1.65	0.87	0.28	0.25	9.3
FY 1981	0.19	0.12	0.12	0.12	0.11	0.12	0.12	0.12	0.33	0.44	0.25	0.24	2.3
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.85	2.08	1.45	1.24	1.31	2.37	3.28	5.01	4.52	3.23	3.31	4.42	35.07
FY 1981	1.27	0.41	1.38	0.	0.99	2.79	2.38	6.33	4.96	4.89	2.76	2.50	30.66
DEVIATION	-1.58	-1.67	-0.07	-1.24	-0.32	0.42	-0.90	1.32	0.44	1.66	-0.55	-1.92	-4.41
POOL ELEVATION													
END OF MONTH	748.23	747.91	747.76	747.52	747.44	747.50	747.46	750.43	750.95	750.48	749.89	749.29	
MAXIMUM	748.79	748.23	748.00	747.76	747.54	747.54	747.53	750.43	751.20	750.95	750.49	749.89	
MINIMUM	748.23	747.91	747.76	747.52	747.43	747.34	747.35	747.36	750.32	749.71	749.89	749.29	
POOL CONTENT-EOM													
(1000AC.FT)	16.68	16.34	16.18	15.92	15.84	15.90	15.86	19.11	19.69	19.16	18.50	17.83	

ARKANSAS RIVER BASIN

SKIATOOK LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1935 THRU 1978	13.47	8.09	3.91	3.61	4.29	12.59	15.35	28.43	16.19	10.64	4.09	12.37	133.0
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	0.09	0.36	3.28	0.08	3.8
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	0.	0.	0.	0.	0.	0.	0.	0.	4.33	3.33	3.30	4.35	15.31
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	2.43	5.72	4.08	2.96	15.19
DEVIATION	0.	0.	0.	0.	0.	0.	0.	0.	-1.90	2.39	0.78	-1.39	-0.12
POOL ELEVATION													
END OF MONTH	0.	0.	0.	0.	0.	0.	0.	0.	620.90	622.40	620.20	620.10	
MAXIMUM	0.	0.	0.	0.	0.	0.	0.	0.	621.00	622.50	630.50	620.70	
MINIMUM	0.	0.	0.	0.	0.	0.	0.	0.	619.50	620.20	620.20	620.10	
POOL CONTENT-EOM													
(1000AC.FT)	0.	0.	0.	0.	0.	0.	0.	0.	0.03	0.05	0.02	0.02	

ARKANSAS RIVER BASIN

NEWT GRAHAM LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1957	306.03	159.47	104.65	137.73	123.85	203.04	501.27	562.13	549.77	233.60	99.67	137.64	3118.9
FY 1981	9.00	11.79	12.02	6.15	11.45	13.36	26.92	97.39	100.68	118.07	59.40	54.94	521.2
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	43.21	192.37	64.12	39.75	86.23	236.28	341.56	360.40	299.35	427.02	80.59	79.73	2250.6
FY 1981	8.61	11.55	12.23	5.82	11.44	12.45	27.35	97.80	101.27	117.42	59.26	54.45	519.7
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.21	2.26	1.58	1.46	1.47	2.49	3.62	4.87	4.72	2.37	3.25	4.49	35.79
FY 1981	2.24	0.54	1.44	0.16	1.26	2.28	2.64	6.57	4.29	4.39	3.41	2.46	31.68
DEVIATION	-0.97	-1.72	-0.14	-1.30	-0.21	-0.21	-0.98	1.70	-0.43	2.02	0.16	-2.03	-4.11
POOL ELEVATION													
END OF MONTH	532.26	532.24	532.49	532.49	532.44	532.49	532.39	532.46	532.49	532.47	532.30	532.38	
MAXIMUM	532.49	532.49	532.49	532.49	532.53	532.52	532.52	532.67	532.53	532.55	532.52	532.49	
MINIMUM	532.10	532.16	511.59	532.30	532.20	532.23	531.80	531.76	531.90	532.01	532.05	532.02	
POOL CONTENT-EOM													
(1000AC.FT)	23.89	23.86	24.24	24.24	24.17	24.24	24.09	24.20	24.24	24.21	23.95	24.08	

ARKANSAS RIVER BASIN

CHOUTEAU LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1957	306.03	159.47	104.65	137.73	123.85	203.31	501.22	562.13	549.77	233.60	99.67	137.64	3119.1
FY 1981	9.26	7.88	10.91	7.66	11.06	14.34	23.01	73.19	92.31	119.48	52.85	39.94	461.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	42.22	188.88	57.93	34.79	80.73	225.99	345.51	345.10	302.12	413.98	76.38	71.62	2185.2
FY 1981	8.40	7.53	10.75	7.82	10.41	13.73	22.20	72.00	91.21	118.04	52.00	41.34	455.4
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.65	2.77	2.05	1.92	2.04	2.89	4.19	5.19	4.96	3.17	2.96	4.30	38.09
FY 1981	2.24	1.28	1.53	0.31	2.08	2.12	3.17	7.06	2.55	4.75	2.85	3.32	33.26
DEVIATION	0.59	-1.49	-0.52	-1.61	0.04	-0.77	-1.02	1.87	-2.41	1.58	-0.11	-0.98	-4.83
POOL ELEVATION													
END OF MONTH	511.24	511.45	511.42	511.45	511.46	511.47	511.42	511.28	511.38	511.30	511.43	511.30	
MAXIMUM	511.51	511.47	511.52	511.52	511.54	511.53	511.69	511.55	511.58	511.57	511.50	511.52	
MINIMUM	511.15	511.24	511.27	511.29	511.16	511.18	511.06	511.08	510.97	511.12	511.20	511.24	
POOL CONTENT-EOM													
(1000AC.FT)	23.11	23.59	23.52	23.59	23.61	23.64	23.52	23.20	23.43	23.25	23.55	23.25	

ARKANSAS RIVER BASIN

COUNCIL GROVE LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1971	5.05	4.28	2.42	2.50	3.27	5.60	9.60	13.85	15.39	12.87	5.97	8.16	89.0
FY 1981	0.27	0.04	1.09	0.22	0.55	0.91	0.56	4.19	28.12	11.16	6.25	2.73	56.1
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.71	1.44	1.53	0.34	1.19	5.56	7.04	3.45	8.51	20.21	1.31	1.33	52.6
FY 1981	0.28	0.36	0.37	0.37	0.33	0.37	0.36	0.37	0.79	23.73	4.39	2.40	34.1
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.39	1.63	1.20	0.85	0.92	1.91	3.17	4.72	5.05	3.88	3.55	4.00	34.27
FY 1981	3.71	0.03	2.45	0.03	0.20	1.59	1.64	5.85	8.80	4.42	2.52	1.84	33.08
DEVIATION	0.32	-1.60	1.25	-0.82	-0.72	-0.32	-1.53	1.13	3.75	0.54	-1.03	-2.16	-1.19
POOL ELEVATION													
END OF MONTH	1267.79	1267.44	1267.56	1267.40	1267.37	1267.34	1267.01	1268.15	1276.54	1272.28	1272.49	1272.32	
MAXIMUM	1268.09	1267.79	1267.67	1267.56	1267.41	1267.40	1267.34	1268.17	1276.54	1276.56	1272.75	1273.00	
MINIMUM	1267.79	1267.44	1267.39	1267.40	1267.33	1267.17	1267.01	1266.87	1268.10	1271.92	1271.72	1272.28	
POOL CONTENT-EOM													
(1000AC.FT)	30.26	29.35	29.66	29.24	29.16	29.09	28.23	31.21	57.18	43.08	43.73	43.20	

ARKANSAS RIVER BASIN

MARION LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1938 THRU 1971	3.16	1.28	1.49	1.94	2.08	3.31	5.91	8.70	10.17	7.13	1.78	4.79	51.7
FY 1981	0.56	0.02	1.13	0.66	0.06	1.81	1.42	3.90	3.62	6.83	5.59	3.44	29.0
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.49	4.21	0.35	0.71	1.83	2.29	6.63	5.63	4.30	12.12	0.77	0.60	39.9
FY 1981	0.62	0.29	0.15	0.12	0.11	0.12	0.12	0.42	0.52	0.55	0.55	0.54	4.1
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.47	1.56	1.06	0.77	0.97	1.76	2.81	4.51	4.80	3.90	3.28	3.84	31.73
FY 1981	1.43	0.06	2.62	0.07	0.17	2.81	1.19	5.82	6.30	4.60	3.96	1.74	30.77
DEVIATION	-1.04	-1.50	1.56	-0.70	-0.80	1.05	-1.62	1.31	1.50	0.70	0.68	-2.10	-0.96
POOL ELEVATION													
END OF MONTH	1347.51	1347.27	1347.32	1347.35	1347.22	1347.33	1347.15	1347.43	1347.50	1348.12	1348.66	1348.80	
MAXIMUM	1347.93	1347.51	1347.41	1347.37	1347.43	1347.34	1347.33	1347.43	1347.50	1348.17	1348.66	1349.12	
MINIMUM	1347.51	1347.27	1347.15	1347.32	1347.21	1347.19	1347.15	1347.06	1347.25	1347.50	1348.12	1348.66	
POOL CONTENT-EOM													
(1000AC.FT)	66.45	65.16	65.43	65.59	64.89	65.48	64.52	66.02	66.40	69.76	72.81	73.60	

ARKANSAS RIVER BASIN

JOHN REDMOND DAM AND RES	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1922 THRU 1965	65.59	51.19	35.89	34.38	34.45	76.13	130.65	145.55	150.15	123.42	44.53	75.81	967.7
FY 1981	8.69	3.62	10.41	3.92	2.18	5.83	4.92	58.33	151.43	161.84	60.19	57.65	529.0
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	9.12	29.04	18.82	10.43	20.08	71.78	109.30	67.63	110.76	172.91	29.12	31.79	680.8
FY 1981	3.79	8.13	5.89	5.20	5.29	8.28	1.79	16.20	102.38	212.08	52.76	63.21	485.0
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.65	1.67	1.16	0.88	0.96	1.96	3.05	4.55	4.95	3.89	3.43	4.17	33.32
FY 1981	3.19	0.05	2.19	0.01	0.07	1.64	0.86	6.64	7.06	5.38	4.62	1.56	33.27
DEVIATION	0.54	-1.62	1.03	-0.87	-0.89	-0.32	-2.19	2.09	2.11	1.49	1.19	-2.61	-0.05
POOL ELEVATION													
END OF MONTH	1037.68	1036.90	1037.39	1037.15	1036.65	1036.09	1036.13	1040.64	1044.68	1039.95	1040.30	1039.33	
MAXIMUM	1037.80	1037.68	1037.42	1037.48	1037.55	1036.65	1036.18	1040.64	1045.00	1044.85	1040.30	1042.85	
MINIMUM	1037.07	1036.90	1036.80	1036.99	1036.65	1035.95	1036.04	1035.98	1039.18	1039.34	1038.92	1039.11	
POOL CONTENT-EOM													
(1000AC.FT)	59.79	53.40	57.39	55.40	51.49	47.20	47.51	87.14	133.06	80.25	83.73	74.40	

ARKANSAS RIVER BASIN

(Grand) PENSACOLA↑LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1977	340.04	324.13	245.40	260.09	285.68	455.00	625.42	721.37	752.16	411.64	175.32	275.35	4871.6
FY 1981	53.95	27.97	36.49	25.59	30.15	48.79	74.38	149.65	446.68	397.88	179.70	143.70	1614.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	133.81	181.32	146.14	87.53	109.14	348.26	439.34	304.70	359.63	634.27	239.64	200.81	3184.6
FY 1981	0.93	11.09	1.05	14.06	9.56	32.63	23.11	42.82	226.10	397.09	259.14	146.14	1163.7
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.44	2.62	1.93	1.74	1.75	2.86	4.08	5.19	5.32	3.64	3.37	4.83	40.77
FY 1981	4.04	0.52	1.43	0.10	1.43	1.19	2.22	4.27	5.76	3.36	4.87	1.87	31.06
DEVIATION	0.60	-2.10	-0.50	-1.64	-0.32	-1.67	-1.86	-0.92	0.44	-0.28	1.50	-2.96	-9.71
POOL ELEVATION													
END OF MONTH	735.20	735.32	736.22	736.29	736.86	736.83	737.77	740.31	744.89	743.68	741.19	740.56	
MAXIMUM	735.20	735.46	736.22	736.40	736.86	737.46	737.77	740.31	744.97	745.91	743.93	742.64	
MINIMUM	734.00	735.20	735.31	736.22	736.28	736.75	736.76	737.69	740.22	743.68	741.18	740.56	
POOL CONTENT-EOM													
(1000AC.FT)	1264.40	1268.84	1302.36	1305.02	1326.68	1325.04	1362.03	1465.02	1666.94	1611.60	1502.17	1475.52	

ARKANSAS RIVER BASIN

LAKE HUDSON	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1977	388.47	333.45	283.02	292.19	326.78	488.81	705.69	829.43	829.39	477.30	231.98	302.67	5489.2
FY 1981	11.58	13.68	4.66	12.81	8.97	35.75	24.69	66.55	260.63	393.66	269.99	146.10	1249.1
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	143.27	204.50	163.86	94.85	129.68	405.61	613.81	354.40	485.73	672.36	244.19	208.59	3720.9
FY 1981	10.08	7.32	0.44	0.71	3.91	27.55	13.27	62.70	269.55	380.21	265.15	149.65	1190.5
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.86	2.93	2.21	1.97	2.11	3.12	4.32	5.50	5.22	3.29	3.43	4.88	42.84
FY 1981	3.90	0.84	1.57	0.17	2.36	1.50	3.05	5.34	5.40	3.79	4.48	2.58	34.98
DEVIATION	0.04	-2.09	-0.64	-1.80	0.25	-1.62	-1.27	-0.16	0.18	0.50	1.05	-2.30	-7.86
POOL ELEVATION													
END OF MONTH	619.39	618.59	618.50	618.84	619.07	619.50	619.93	619.67	618.73	619.25	619.47	619.62	
MAXIMUM	619.74	619.56	619.30	619.16	619.46	619.99	620.18	620.45	619.77	619.83	619.79	619.62	
MINIMUM	618.45	618.41	618.35	618.21	618.60	618.97	619.10	618.94	618.66	618.09	618.50	618.59	
POOL CONTENT-EOM													
(1000AC.FT)	204.61	195.91	194.94	198.59	201.07	205.83	210.58	207.70	197.41	203.06	205.49	207.15	

ARKANSAS RIVER BASIN

FORT GIBSON LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1962	431.30	322.90	258.40	289.20	352.30	489.50	831.60	1037.90	946.20	504.00	251.40	341.70	6056.4
FY 1981	18.25	11.70	12.50	8.33	15.47	40.56	35.70	97.98	302.67	424.99	277.96	147.55	1393.7
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	156.57	217.56	189.20	119.88	130.67	436.92	651.24	406.24	483.95	752.99	254.42	207.27	4006.9
FY 1981	8.42	6.35	12.26	4.35	16.05	62.00	31.12	83.00	266.87	439.01	289.39	140.29	1359.1
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.72	2.90	2.22	1.99	2.15	3.11	4.32	5.40	5.09	3.13	3.25	4.15	41.43
FY 1981	2.44	1.07	1.55	0.12	2.56	1.83	2.94	6.19	3.80	4.72	4.48	2.80	34.50
DEVIATION	-1.28	-1.83	-0.67	-1.87	0.41	-1.28	-1.38	0.79	-1.29	1.59	1.23	-1.35	-6.93
POOL ELEVATION													
END OF MONTH	554.34	554.34	554.22	554.30	554.14	552.70	552.47	552.99	554.82	554.20	553.21	553.59	
MAXIMUM	554.36	554.39	554.52	554.40	554.52	554.17	552.70	553.35	556.11	555.36	554.40	553.81	
MINIMUM	553.92	554.21	554.13	554.21	554.01	552.70	552.18	552.30	552.68	553.59	552.93	553.17	
POOL CONTENT-EOM													
(1000AC.FT)	371.76	371.76	369.45	370.99	367.90	341.10	336.96	346.32	381.03	369.06	350.43	357.53	

ARKANSAS RIVER BASIN

WEBBERS FALLS L&D	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1961	1241.40	785.50	655.50	602.00	690.90	934.00	1555.00	2503.10	2314.10	1640.50	925.40	834.40	14687.6
FY 1981	63.07	72.79	85.09	72.00	79.54	128.43	113.85	413.99	836.13	872.23	579.25	401.20	3717.6
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	279.80	639.16	366.54	247.86	303.27	923.77	1432.82	1372.16	1487.99	1520.76	507.29	534.07	9615.5
FY 1981	55.54	70.29	83.55	68.54	76.50	124.52	109.57	407.65	852.57	881.55	579.44	419.31	3729.0
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.29	2.79	2.14	1.93	2.14	2.95	4.30	5.22	5.00	3.11	2.99	4.35	38.21
FY 1981	2.08	1.21	1.63	0.40	2.16	2.23	3.65	6.02	2.93	5.50	4.23	2.62	34.66
DEVIATION	0.79	-1.58	-0.51	-1.53	0.02	-0.72	-0.65	0.80	-2.07	2.39	1.24	-1.73	-3.55
POOL ELEVATION													
END OF MONTH	489.77	489.67	489.57	489.74	489.83	489.91	489.97	489.87	489.96	489.75	489.74	489.57	
MAXIMUM	490.17	489.99	490.20	490.01	490.30	490.40	490.33	490.34	490.22	490.20	490.14	490.10	
MINIMUM	489.56	489.45	489.35	489.50	489.16	489.55	489.48	488.98	489.60	489.27	489.55	489.56	
POOL CONTENT-EOM (1000AC.FT)	162.76	161.70	160.64	162.44	163.40	164.25	164.88	163.82	164.77	162.55	162.44	160.64	

ARKANSAS RIVER BASIN

TENKILLER LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1971	54.06	59.60	75.26	85.66	99.58	126.53	171.28	198.38	115.63	54.87	42.85	31.93	1115.6
FY 1981	2.85	6.09	11.37	6.88	12.65	25.68	31.96	90.78	67.61	52.44	43.05	9.92	361.3
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	37.73	21.24	33.68	39.53	28.93	50.11	106.91	99.75	62.03	53.80	46.20	30.35	610.3
FY 1981	4.11	3.50	2.90	2.91	2.64	2.95	3.21	3.07	73.05	72.17	63.03	55.07	288.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.71	3.16	2.65	2.26	2.69	3.50	4.70	5.63	4.86	3.22	3.38	4.43	44.19
FY 1981	2.57	1.56	1.81	0.15	2.42	2.11	3.20	5.78	3.06	5.59	5.74	1.83	35.82
DEVIATION	-1.14	-1.60	-0.84	-2.11	-0.27	-1.39	-1.50	0.15	-1.80	2.37	2.36	-2.60	-8.37
POOL ELEVATION													
END OF MONTH	620.99	621.00	621.68	621.96	622.71	624.37	626.48	633.21	632.40	630.34	628.32	624.06	
MAXIMUM	621.44	621.07	621.68	621.96	622.71	624.37	626.48	633.21	634.39	632.55	631.50	628.32	
MINIMUM	620.98	620.92	621.00	621.67	621.96	622.71	624.37	626.48	632.38	629.33	628.32	624.06	
POOL CONTENT-EOM (1000AC.FT)	522.89	523.00	530.41	533.46	541.92	561.09	585.66	669.95	659.34	632.88	608.04	557.50	

CONCHAS LAKE

Inflows (1000 Ac. Ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Avg 1940 thru 1981	17.6	21.5	19.9	10.6	3.8	3.5	4.8	8.1	14.6	22.1	32.8	16.7	176.0
FY 1981	.4	.2	1.0	.4	.4	1.4	.8	.7	2.8	8.9	76.3	13.2	106.5
Releases (1000 Ac. Ft.)													
Avg 1941 thru 1981	4.0	1.1	1.0	.8	1.0	.7	14.1	10.8	8.3	8.1	9.2	12.7	71.8
FY 1981	12.6	.6	.1	0	.1	.4	12.2	10.1	9.7	4.5	3.2	6.6	60.1
Rainfall (Inches)													
Avg 1940 thru 1981	.94	.43	.42	.32	.35	.56	.88	1.38	1.44	2.54	2.34	1.50	13.10
FY 1981	.02	.41	.06	0	.08	1.21	.62	1.30	.76	1.49	5.31	.61	11.15
Pool Elevation (EOM)	4167.84	4167.58	4167.53	4167.58	4167.47	4167.30	4163.77	4160.50	4157.66	4158.25	4175.72	4176.60	
Maximum	4171.02	4167.83	4167.57	4167.59	4167.56	4167.50	4167.28	4163.64	4160.42	4159.28	4175.72	4177.05	4177.05
Minimum	4167.84	4167.58	4167.51	4167.54	4167.45	4167.30	4163.77	4160.50	4157.24	4157.90	4158.14	4175.72	4157.24
Pool Content (EOM) (1000 Ac. Ft.)	116.0	114.9	114.7	114.9	114.5	113.8	100.0	88.2	78.8	80.7	151.5	155.9	

(Meredith)

SANFORD† RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1961	28.80	3.30	2.20	3.60	1.60	1.80	14.40	49.60	45.20	47.90	41.70	39.40	279.6
FY 1981	0.02	0.01	2.29	1.40	0.09	4.66	3.00	4.38	18.72	14.82	143.40	43.48	236.2
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.36	0.56	0.50	0.43	0.47	0.67	1.13	2.44	2.35	2.75	2.48	1.65	16.79
FY 1981	0.35	0.46	0.36	0.01	0.02	1.09	0.56	1.45	2.06	1.76	6.65	2.42	17.19
DEVIATION	-1.01	-0.10	-0.14	-0.42	-0.45	0.42	-0.57	-0.99	-0.29	-0.99	4.17	0.77	0.40
POOL ELEVATION													
END OF MONTH	2882.07	2881.10	2880.30	2879.55	2878.80	2878.28	2877.27	2876.38	2877.12	2877.21	2893.99	2897.74	
MAXIMUM	2883.59	2882.07	2881.10	2880.32	2879.57	2878.80	2878.28	2877.32	2877.37	2878.19	2893.99	2897.75	
MINIMUM	2882.04	2881.10	2880.30	2879.55	2878.80	2878.28	2877.23	2876.14	2876.38	2877.12	2877.11	2893.98	
POOL CONTENT-EOM													
(1000AC.FT)	212.27	205.07	199.24	193.85	188.53	184.90	177.92	171.90	176.89	177.51	313.56	350.01	

(Thunderbird)
NORMAN RESERVOIR

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1961	3.80	0.90	1.60	1.10	2.10	4.20	9.50	13.70	12.10	4.40	0.70	2.40	56.5
FY 1981	0.	0.33	1.02	0.	1.10	2.80	1.42	2.49	5.74	2.78	1.38	0.34	19.4
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.	0.	0.	0.	0.	0.	0.	0.63	1.89	0.86	0.	0.	3.4
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.96	2.03	1.52	1.31	1.53	2.23	3.52	5.33	4.30	2.93	2.66	3.60	33.92
FY 1981	1.06	0.96	1.85	0.01	1.63	3.38	1.85	4.20	6.15	3.41	3.78	1.29	29.57
DEVIATION	-1.90	-1.07	0.33	-1.30	0.10	1.15	-1.67	-1.13	1.85	0.48	1.12	-2.31	-4.35
POOL ELEVATION													
END OF MONTH	1035.69	1035.43	1035.39	1035.10	1035.00	1035.08	1034.83	1034.79	1035.20	1034.98	1034.60	1033.95	
MAXIMUM	1036.35	1035.69	1035.60	1035.39	1035.10	1035.22	1035.08	1034.94	1035.28	1035.37	1034.98	1034.66	
MINIMUM	1035.69	1035.43	1035.37	1035.09	1034.89	1034.99	1034.83	1034.67	1034.78	1034.62	1034.60	1033.95	
POOL CONTENT-EOM (1000AC.FT)	100.60	99.16	98.94	97.35	96.80	97.24	95.94	95.74	97.90	96.70	94.78	91.50	

ARKANSAS RIVER BASIN

OPTIMA LAKE

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1939 THRU 1977	2.47	0.92	0.75	0.88	0.95	1.16	1.84	6.28	7.23	4.49	3.84	3.57	34.4
FY 1981	0.02	0.13	0.13	0.	0.	0.18	0.28	0.30	0.35	0.31	3.10	0.01	4.8
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.17	0.58	0.41	0.36	0.42	0.76	1.21	2.55	2.24	2.73	2.45	1.67	16.55
FY 1981	0.17	0.46	0.21	0.	0.	0.58	0.43	2.14	0.93	1.63	3.13	0.35	10.03
DEVIATION	-1.00	-0.12	-0.20	-0.36	-0.42	-0.18	-0.78	-0.41	-1.31	-1.10	0.68	-1.32	-6.52
POOL ELEVATION													
END OF MONTH	2719.70	2719.60	2719.70	2719.60	2719.30	2719.10	2718.80	2718.60	2717.90	2717.40	2720.55	2720.00	
MAXIMUM	2720.20	2719.70	2719.70	2719.70	2719.60	2719.30	2719.10	2718.80	2718.60	2717.90	2720.65	2720.55	
MINIMUM	2719.70	2719.50	2719.60	2719.60	2719.30	2719.00	2718.80	2718.60	2717.90	2717.40	2717.30	2720.00	
POOL CONTENT-EOM (1000AC.FT)	4.47	4.39	4.47	4.39	4.13	3.96	3.72	3.57	3.04	2.71	5.25	4.73	

ARKANSAS RIVER BASIN

FORT SUPPLY LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1966	7.40	3.70	1.70	1.70	2.00	2.70	4.70	13.00	13.80	5.20	4.10	4.40	64.5
FY 1981	0.12	0.76	1.66	1.63	1.85	2.68	2.56	2.19	0.94	0.72	0.95	0.47	16.5
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.03	0.88	0.75	0.79	1.36	1.63	2.74	12.14	4.74	0.45	0.32	0.42	26.2
FY 1981	0.	0.	0.	0.	0.13	2.52	1.29	1.19	0.	0.	0.	0.	5.1
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.61	0.96	0.66	0.55	0.80	1.14	1.72	3.47	3.09	2.47	2.47	1.86	20.80
FY 1981	0.46	0.11	1.24	0.01	0.01	2.06	0.64	2.23	1.29	2.58	2.96	1.38	14.97
DEVIATION	-1.15	-0.85	0.58	-0.54	-0.79	0.92	-1.08	-1.24	-1.80	0.11	0.49	-0.48	-5.83
POOL ELEVATION													
END OF MONTH	2001.91	2002.13	2002.99	2003.75	2004.40	2004.19	2004.17	2004.16	2003.69	2003.33	2003.22	2002.97	
MAXIMUM	2002.34	2002.14	2002.99	2003.84	2004.46	2004.46	2004.40	2004.26	2004.24	2003.76	2003.35	2003.39	
MINIMUM	2001.85	2001.90	2002.09	2002.98	2003.75	2004.19	2003.98	2003.96	2003.69	2003.20	2003.07	2002.97	
POOL CONTENT-EOM													
(1000AC.FT)	10.29	10.64	12.06	13.44	14.66	14.26	14.22	14.20	13.33	12.68	12.48	12.03	

ARKANSAS RIVER BASIN

CANTON LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1966	22.90	5.70	3.90	4.20	5.60	7.50	13.80	39.90	42.50	17.50	11.50	13.70	189.3
FY 1981	0.50	0.	2.06	1.32	2.44	5.76	4.37	3.45	3.82	2.06	1.60	0.64	28.0
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	5.39	5.10	6.87	3.45	1.31	2.72	8.66	3.67	13.17	3.30	1.36	6.26	61.3
FY 1981	0.12	29.62	0.39	0.31	0.19	0.25	24.63	1.07	0.36	0.38	0.38	0.31	58.0
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.48	0.92	0.60	0.51	0.71	1.09	1.64	3.20	2.81	2.58	2.54	1.83	19.91
FY 1981	0.60	0.29	1.31	0.01	0.02	1.84	0.80	3.33	1.65	2.57	3.02	1.90	17.34
DEVIATION	-0.88	-0.63	0.71	-0.50	-0.69	0.75	-0.84	0.13	-1.16	-0.01	0.48	0.07	-2.57
POOL ELEVATION													
END OF MONTH	1613.16	1608.21	1608.34	1608.45	1608.63	1609.31	1605.05	1605.06	1605.00	1604.54	1604.20	1603.80	
MAXIMUM	1613.70	1613.19	1608.44	1608.49	1608.69	1609.35	1609.47	1605.13	1605.19	1605.00	1604.54	1604.27	
MINIMUM	1613.16	1608.19	1608.08	1608.30	1608.41	1608.63	1605.05	1604.85	1604.69	1604.54	1604.09	1603.70	
POOL CONTENT-EOM													
(1000AC.FT)	94.35	62.12	62.88	63.52	64.56	68.61	45.70	45.75	45.46	43.33	41.76	39.96	

ARKANSAS RIVER BASIN

EUFAULA LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1978	329.09	249.47	213.86	214.29	268.70	364.17	545.47	801.15	593.79	259.73	146.22	222.09	4208.1
FY 1981	8.33	17.26	49.19	17.16	44.33	94.61	62.83	207.81	284.69	88.29	63.84	31.40	969.8
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	78.82	66.98	47.23	88.84	57.78	36.57	127.42	321.24	373.60	223.56	146.70	60.99	1629.7
FY 1981	21.40	13.06	11.95	6.16	6.55	7.08	6.14	5.71	60.81	333.53	274.06	85.31	631.8
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.24	2.42	1.92	1.64	1.98	2.71	3.91	5.44	4.39	3.10	2.90	4.03	37.68
FY 1981	1.64	1.15	1.97	0.10	1.95	2.40	1.75	5.76	5.34	5.61	4.68	2.40	34.75
DEVIATION	-1.60	-1.27	0.05	-1.54	-0.03	-0.31	-2.16	0.32	0.95	2.51	1.78	-1.63	-2.93
POOL ELEVATION													
END OF MONTH	578.93	578.80	579.12	579.12	579.44	580.03	580.46	582.39	584.28	583.25	580.54	579.57	
MAXIMUM	579.49	578.93	579.24	579.15	579.44	580.15	580.51	582.39	584.80	584.58	583.35	580.54	
MINIMUM	578.93	578.70	578.63	579.03	579.02	579.44	580.20	580.43	582.39	583.08	580.54	579.57	
POOL CONTENT-EOM													
(1000AC.FT)	1766.61	1755.86	1782.66	1782.66	1810.02	1878.09	1898.29	2073.24	2256.83	2155.15	1905.31	1821.13	

ARKANSAS RIVER BASIN

R.S.KERR LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1960	1628.20	1073.50	1006.60	1061.90	1130.70	1509.50	2213.00	3584.70	3196.60	2192.00	1271.50	1063.90	20878.1
FY 1981	85.83	80.73	101.06	65.55	98.18	173.35	140.53	488.75	906.64	954.64	798.94	502.61	4396.8
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	385.17	720.90	465.61	392.62	433.48	1130.93	1765.90	1959.17	1991.68	1764.29	702.66	603.83	12316.2
FY 1981	83.38	66.70	107.17	42.45	87.74	177.44	110.31	471.52	912.21	936.83	839.84	503.70	4339.3
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.69	3.05	2.63	2.16	2.64	3.42	4.63	5.55	4.64	3.21	3.24	4.27	43.13
FY 1981	2.33	1.81	1.89	0.49	2.67	2.69	3.11	7.11	2.43	5.72	4.08	2.96	37.29
DEVIATION	-1.36	-1.24	-0.74	-1.67	0.03	-0.73	-1.52	1.56	-2.21	2.51	0.84	-1.31	-5.84
POOL ELEVATION													
END OF MONTH	459.48	459.48	459.20	459.54	459.60	459.18	459.47	459.79	459.28	459.30	459.43	459.20	
MAXIMUM	459.74	459.98	459.84	459.54	460.00	459.90	459.75	460.19	460.00	460.11	460.13	460.03	
MINIMUM	459.21	459.34	459.13	458.90	459.16	458.65	458.45	458.44	458.78	458.99	458.97	459.08	
POOL CONTENT-EOM													
(1000AC.FT)	472.90	472.90	461.76	475.29	477.68	460.96	472.51	485.24	464.94	465.74	470.91	461.76	

ARKANSAS RIVER BASIN

W.D. MAYO LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1923 THRU 1960	1628.20	1073.50	1006.60	1061.90	1130.70	1509.50	2213.00	3584.70	3196.60	2192.00	1217.50	1063.90	20878.1
FY 1981	145.80	132.67	174.74	109.39	151.04	242.98	176.23	538.99	951.08	1001.45	886.61	535.74	5046.7
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	437.48	764.86	519.63	448.28	462.42	1231.49	1803.89	1902.59	2040.87	1804.07	757.11	654.01	12826.7
FY 1981	147.52	132.95	174.26	109.56	151.02	236.71	175.16	546.80	950.47	1002.94	907.47	555.79	5090.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.45	3.29	2.76	2.26	2.89	3.63	4.54	5.48	4.31	3.19	3.08	4.17	42.99
FY 1981	3.13	2.12	1.35	0.74	2.55	3.35	3.60	5.56	2.89	6.79	4.78	1.96	38.82
DEVIATION	-0.32	-1.17	-1.41	-1.52	-0.28	-0.28	-0.94	0.08	-1.42	3.60	1.70	-2.21	-4.17
POOL ELEVATION													
END OF MONTH	412.92	412.57	412.73	412.86	412.79	412.59	413.00	412.85	413.10	412.92	412.60	412.17	
MAXIMUM	413.18	413.09	413.15	413.11	413.12	413.17	413.17	413.17	413.26	413.19	413.11	413.24	
MINIMUM	412.37	412.43	412.18	412.31	412.20	412.13	412.31	412.31	411.69	412.13	412.22	412.17	
POOL CONTENT-EOM (1000AC.FT)	15.64	15.09	15.34	15.55	15.44	15.12	15.77	15.53	15.93	15.64	15.13	14.45	

ARKANSAS RIVER BASIN

WISTER LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1938 THRU 1970	15.73	42.54	58.34	75.08	101.10	119.00	138.30	143.40	46.25	25.42	10.33	18.49	794.1
FY 1981	19.17	8.23	42.03	5.00	34.66	71.31	29.36	139.13	199.84	42.96	17.94	4.96	614.6
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	1.07	5.91	50.58	37.45	38.64	106.63	66.61	85.23	95.12	22.83	8.57	5.66	524.3
FY 1981	0.57	5.88	76 00	5.20	27.08	75.65	28.72	77.10	218.00	38.88	18.49	2.63	574.2
RAINFALL(INCHES)													
AVG 1930 THRU 1977	5.92	3.56	3.14	2.74	3.17	3.98	4.69	5.73	4.13	3.59	3.36	4.17	48.18
FY 1981	4.56	1.93	2.14	0.55	2.80	3.73	3.49	8.54	5.06	7.74	6.20	2.35	49.09
DEVIATION	-1.36	-1.63	-1.00	-2.19	-0.37	-0.25	-1.20	2.81	0.93	4.15	2.84	-1.82	0.91
POOL ELEVATION													
END OF MONTH	477.84	477.99	471.85	471.68	473.33	472.39	472.17	481.24	478.43	478.53	478.04	478.00	
MAXIMUM	477.84	478.41	478.47	471.90	474.18	478.17	473.16	481.24	492.88	480.66	478.77	478.11	
MINIMUM	474.88	477.84	471.85	471.65	471.59	471.60	471.54	471.91	478.43	477.94	478.03	477.94	
POOL CONTENT-EOM (1000AC.FT)	61.24	62.29	28.09	27.42	34.68	30.40	29.44	89.30	65.64	66.40	62.66	62.36	

LOCK AND DAM NO. 13	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1 Oct thru 1981	1,237.6	2,331.2	1,825.2	1,470.7	1,411.0	2,897.4	2,780.9	2,903.6	3,035.7	1,622.2	728.3	840.7	23,084.5
WY 1981	102.5	80.9	194.2	45.0	141.3	344.7	162.4	769.6	1,362.6	1,060.0	898.7	451.1	5,613.0
Project Rainfall (inches)													
Avg 1972 thru 1981	3.0	4.4	2.4	1.5	2.2	4.7	3.1	4.5	4.0	2.9	2.3	4.0	35.4
WY 1981	3.2	1.8	1.4	0.9	3.1	3.3	2.3	6.4	4.0	5.8	2.8	1.4	36.4
Deviation	+0.2	-2.6	-1.0	-0.6	+0.9	-1.4	-0.8	+1.9	0.0	+2.9	+0.5	-2.6	+1.0
Pool Elevation													
End of Month	392.63	391.42	391.47	391.60	391.90	391.72	391.72	391.79	391.55	391.82	391.82	391.94	
Maximum	392.05	392.34	392.40	392.10	392.15	292.18	392.35	392.35	392.21	392.22	392.27	392.28	
Minimum	391.03	391.20	391.10	391.40	391.12	391.16	391.09	391.20	391.00	391.13	391.02	390.82	
Pool Content EOM (1,000 AC. FT.)	56.7	55.3	55.6	56.5	58.4	57.3	57.3	57.7	56.1	57.9	57.9	58.7	

OZARK-JETA TAYLOR LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1972 thru 1981	1,093.9	2,525.8	2,104.8	1,536.3	1,537.2	3,284.5	3,188.1	3,195.3	3,279.8	1,736.4	817.6	886.5	25,186.2
WY 1981	92.2	81.2	226.1	50.9	189.0	442.5	211.4	911.0	1,711.7	1,355.1	1,238.5	714.0	7,223.6
Project Rainfall (inches)													
Avg 1973 thru 1981	3.0	5.0	3.0	2.0	2.5	5.2	3.5	5.0	4.4	3.5	2.2	4.4	43.7
WY 1981	3.2	1.7	1.3	0.9	3.6	4.1	2.2	6.3	5.1	4.8	4.1	1.9	39.2
Deviation	+0.2	-3.3	-1.7	-1.1	+1.1	-1.1	-1.3	+1.3	+0.7	+1.3	+1.9	-2.5	-4.5
Pool Elevation													
End of Month	371.32	371.82	370.78	371.34	370.90	370.70	371.20	372.47	372.62	371.94	371.92	372.08	
Maximum	372.18	372.05	372.44	371.45	372.58	372.67	371.94	372.56	372.70	372.68	372.20	372.17	
Minimum	370.20	370.44	370.07	370.30	370.90	370.12	370.00	370.20	371.64	371.48	371.42	371.28	
Pool Content EOM (1,000 AC. FT.)	141.8	146.7	136.6	142.0	137.7	135.8	140.6	153.9	155.7	147.8	147.6	149.3	

DARDANELLE LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1966 thru 1981	1,226.7	2,098.1	1,912.5	1,578.7	1,622.3	2,768.5	3,027.8	3,266.9	2,890.7	1,642.3	916.9	888.5	23,839.9
WY 1981	80.9	72.6	238.7	54.8	236.9	585.6	274.6	990.9	1,729.4	1,016.9	959.4	526.8	6,767.5
Project Rainfall (inches)													
Avg 1971 thru 1981	3.9	4.8	4.3	2.5	3.0	5.7	3.9	5.6	4.6	2.2	3.1	4.1	47.7
WY 1981	3.6	1.8	1.4	1.2	2.7	5.0	1.4	8.6	5.0	1.6	5.6	0.7	38.6
Deviation	-0.3	-3.0	-2.9	-1.3	-0.3	-0.7	-2.5	+3.0	+0.4	-0.6	+2.5	-3.4	-9.1
Pool Elevation													
End of Month	337.05	337.15	337.42	337.36	337.71	337.94	337.86	337.97	336.77	337.70	337.32	337.02	
Maximum	337.05	337.28	338.03	337.42	338.39	338.02	337.97	338.37	338.37	338.03	338.01	338.13	
Minimum	336.40	336.74	337.10	337.02	337.35	336.84	336.86	336.96	336.77	336.77	337.16	337.02	
Pool Content EOM (1,000 AC. FT.)	454.4	457.7	466.8	464.8	476.5	484.2	481.5	485.2	445.4	476.2	463.4	453.4	

BLUE MOUNTAIN LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1948 thru 1981	5.8	21.0	30.1	38.8	43.4	64.7	56.9	56.2	17.0	7.3	5.5	5.4	352.1
WY 1981	2.5	2.9	12.8	1.2	16.0	52.4	12.0	64.1	66.7	11.0	10.7	2.3	354.6
Releases (1,000 AC. FT.)													
Avg 1948 thru 1981	4.6	13.1	30.5	34.9	39.3	48.8	44.9	53.6	36.8	19.2	12.6	7.2	345.5
WY 1981	2.6	3.1	12.3	1.5	14.6	47.6	12.5	23.9	80.5	26.8	14.2	3.5	243.1
Basin Rainfall (inches)													
Avg 1948 thru 1981	3.1	3.3	3.3	2.6	2.9	4.1	4.2	5.2	3.6	4.1	3.3	3.7	43.4
WY 1981	3.1	2.1	1.9	1.8	2.6	4.3	2.4	9.0	4.9	5.7	4.8	2.3	44.9
Deviation	0.0	-1.2	-1.4	-0.8	-0.3	+0.2	-1.8	+3.8	+1.3	+1.6	+1.5	-1.4	+1.5
Pool Elevation													
End of Month	384.33	384.17	384.27	384.07	384.43	385.81	385.39	395.39	391.93	386.29	384.87	384.26	
Maximum	384.51	384.52	385.97	384.28	385.95	387.91	385.81	395.39	403.85	391.93	387.07	384.87	
Minimum	383.99	384.12	384.12	384.07	384.07	384.22	384.18	385.39	391.93	385.74	384.87	384.26	
Pool Content EOM (1,000 AC. FT.)	25.7	25.2	25.5	24.9	26.0	30.2	28.9	68.3	52.5	31.7	27.3	25.4	

LOCK AND DAM NO. 9	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,373.8	2,571.4	2,715.6	1,771.5	1,652.7	3,287.4	3,475.8	3,559.1	3,279.1	1,644.7	784.0	948.6	27,063.7
WY 1981	110.1	91.6	266.8	70.0	308.2	823.3	366.9	1,090.1	2,015.6	1,108.2	1,075.8	578.6	7,905.2
Project Rainfall (inches)													
Avg 1971 thru 1981	3.2	4.5	4.0	2.4	2.7	5.0	4.0	5.1	4.8	2.6	2.9	4.3	45.5
WY 1981	2.9	2.6	1.5	0.8	3.9	4.0	2.9	7.9	7.4	1.2	4.3	0.6	40.0
Deviation	-0.3	-1.9	-2.5	-1.6	+1.2	-1.0	-1.1	2.8	+2.6	-1.4	+1.4	-3.7	-5.5
Pool Elevation													
End of Month	286.19	285.34	286.28	286.13	286.69	286.41	285.57	285.70	286.47	286.38	286.32	286.26	
Maximum	287.25	287.20	287.07	286.42	287.13	287.19	287.50	287.12	287.30	287.59	287.22	287.30	
Minimum	284.60	285.04	285.31	285.73	285.44	285.05	285.30	285.21	284.90	284.84	285.50	284.55	
Pool Content EOM (1,000 AC. FT.)	60.1	55.7	60.6	59.8	62.9	61.4	56.9	57.5	61.7	61.2	60.9	60.5	

TOAD SUCK FERRY LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,288.3	2,604.1	2,352.2	1,966.4	1,818.6	3,636.9	3,667.3	3,709.3	3,377.4	2,316.3	792.6	966.3	28,495.7
WY 1981	148.0	142.6	343.9	93.4	425.5	924.1	414.3	1,167.5	2,164.8	1,104.0	1,069.7	562.1	8,559.9
Project Rainfall (inches)													
Avg 1971 thru 1981	3.3	5.2	4.4	2.7	2.9	5.1	4.1	5.2	5.1	2.5	2.4	4.2	47.1
WY 1981	1.3	4.2	1.6	0.8	3.7	4.1	2.8	6.7	5.6	3.3	2.8	0.9	37.8
Deviation	-2.0	-1.0	-2.8	-1.9	+0.8	-1.0	-1.3	+1.5	+0.5	+0.8	+0.4	-3.3	-9.3
Pool Elevation													
End of Month	265.28	265.35	265.40	265.42	265.15	265.30	265.32	264.60	265.02	264.87	265.30	265.15	
Maximum	265.53	265.50	265.56	265.50	265.70	265.74	265.60	265.42	265.50	265.60	265.62	265.58	
Minimum	264.98	265.05	264.79	264.86	264.82	264.79	264.76	264.55	264.35	264.80	264.80	264.84	
Pool Content EOM (1,000 AC. FT.)	34.2	34.5	34.7	34.8	33.6	34.3	34.4	31.4	33.1	32.5	34.3	33.6	

NIMROD LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1944 thru 1981	11.0	34.8	58.9	68.9	85.1	101.8	90.8	97.4	35.8	12.7	6.2	7.9	611.3
WY 1981	25.2	10.7	44.3	5.5	35.6	88.9	31.5	101.8	123.3	23.7	14.9	5.1	510.5
Releases (1,000 AC. FT.)													
Avg 1944 thru 1981	8.7	25.1	55.7	62.6	74.8	99.1	94.1	95.8	51.4	24.5	11.0	10.3	613.1
WY 1981	27.0	10.8	44.3	4.9	33.6	82.4	25.1	90.8	134.0	22.7	18.9	8.2	502.7
Basin Rainfall (inches)													
Avg 1944 thru 1981	3.4	3.7	3.7	3.1	3.5	5.0	4.8	5.7	4.0	4.1	3.1	3.8	47.9
WY 1981	3.4	2.1	2.3	1.0	2.6	4.5	2.8	8.2	5.6	6.9	4.6	2.9	46.9
Deviation	0.0	-1.6	-1.4	-2.1	-0.9	-0.5	-2.0	+2.5	1.6	+2.8	+1.5	-0.9	-1.0
Pool Elevation													
End of Month	342.18	342.07	342.00	342.09	342.54	343.95	345.19	347.14	344.55	344.40	343.16	342.10	
Maximum	344.57	342.33	346.95	342.26	344.56	345.33	345.40	348.70	355.49	346.11	344.62	343.16	
Minimum	341.93	342.05	342.00	342.00	342.09	342.17	341.97	345.03	344.52	343.88	343.16	342.10	
Pool Content EOM (1,000 AC. FT.)	29.6	29.3	29.0	29.3	30.9	36.6	42.0	51.7	39.1	38.5	33.2	29.4	

MURRAY LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,452.2	2,631.8	2,608.8	2,056.8	1,914.3	3,778.4	3,849.2	4,082.8	3,481.8	1,677.8	780.0	980.9	29,294.8
WY 1981	157.7	143.8	369.9	85.7	506.2	989.6	460.0	1,276.4	2,431.5	1,086.9	1,023.1	535.3	9,066.1
Project Rainfall (inches)													
Avg 1970 thru 1981	3.8	5.1	3.9	3.1	2.8	4.5	5.3	5.8	4.2	2.5	2.8	4.1	47.9
WY 1981	3.4	6.5	2.3	1.0	3.4	4.4	2.2	9.7	3.8	5.4	0.7	1.9	44.7
Deviation	-0.4	+1.4	-1.6	-2.1	+0.6	-0.1	-3.1	+3.9	-0.4	+2.9	-2.1	-2.2	-3.2
Pool Elevation													
End of Month	249.78	249.97	249.92	249.93	249.88	249.70	249.88	248.43	249.54	250.21	249.64	249.46	
Maximum	250.40	249.98	250.12	250.12	250.15	250.08	250.15	250.11	249.97	250.49	250.39	249.74	
Minimum	249.33	249.51	249.58	249.72	249.64	249.24	249.61	248.43	248.43	249.32	249.64	249.33	
Pool Content EOM (1,000 AC. FT.)	95.1	97.1	96.6	96.7	96.2	94.3	96.2	81.9	92.7	99.7	93.7	91.7	

DAVID D. TERRY LOCK AND DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1969 thru 1981	1,345.0	2,479.8	2,717.8	2,303.3	2,248.2	3,853.3	3,975.9	4,084.9	3,586.5	1,815.1	822.4	979.1	30,211.3
WY 1981	168.8	167.0	392.3	97.0	527.0	1,042.7	481.4	1,306.3	2,438.3	1,068.1	1,018.9	545.5	9,253.3
Project Rainfall (inches)													
Avg 1971 thru 1981	3.6	4.9	4.1	3.7	2.8	4.7	4.6	5.2	4.6	3.7	2.3	3.6	47.8
WY 1981	2.0	6.0	2.0	1.1	2.6	4.8	2.1	7.1	4.3	6.3	1.9	2.4	42.6
Deviation	-1.6	+1.1	-2.1	-2.6	-0.2	+0.1	-2.5	+1.9	-0.3	+2.6	-0.4	-1.2	-5.2
Pool Elevation													
End of Month	231.38	331.29	230.98	231.19	231.23	231.16	231.09	230.91	230.99	231.00	231.29	231.08	
Maximum	231.42	231.58	231.47	231.40	231.46	231.43	231.50	231.44	231.48	231.59	231.49	231.99	
Minimum	230.87	230.93	230.86	230.98	230.80	230.84	230.86	230.70	230.44	230.04	230.30	230.74	
Pool Content EOM (1,000 AC. FT.)	51.2	50.8	49.4	50.4	50.6	50.2	49.9	49.2	49.5	49.5	50.8	49.9	

LOCK AND DAM NO. 5	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1972 thru 1981	1,410.1	2,665.0	2,555.1	2,150.1	1,851.6	3,875.2	3,996.4	4,067.9	3,600.7	1,749.8	809.4	1,016.2	29,747.5
WY 1981	176.3	205.1	454.6	102.5	564.1	1,163.1	537.5	1,428.3	2,549.6	1,196.8	1,089.1	557.6	10,024.6
Project Rainfall (inches)													
Avg 1971 thru 1981	3.4	5.1	4.3	3.4	2.9	5.0	4.4	5.9	3.9	3.4	2.3	4.0	48.0
WY 1981	2.6	6.7	1.7	0.9	2.6	3.7	2.2	8.0	6.4	6.0	2.0	2.5	45.3
Deviation	-0.8	1.6	-2.6	-2.5	-0.3	-1.3	-2.2	+2.1	+2.5	+2.6	-0.3	-1.5	-2.7
Pool Elevation													
End of Month	213.37	213.30	213.17	213.09	213.10	213.20	213.25	214.48	213.27	213.13	213.35	213.12	
Maximum	213.42	213.46	213.37	213.39	213.43	213.40	213.35	213.44	213.35	213.90	213.60	213.35	
Minimum	212.82	213.05	212.80	212.88	212.87	212.85	212.94	212.12	212.29	212.70	212.82	212.88	
Pool Content EOM (1,000 AC. FT.)	64.0	63.5	62.5	61.9	62.0	62.7	63.1	58.0	63.2	62.2	63.8	62.2	

ARKANSAS RIVER BASIN

LOCK AND DAM NO. 4	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,422.0	2,699.7	2,607.0	2,218.9	2,060.7	3,989.0	4,151.1	4,210.6	3,711.8	1,770.1	816.0	1,031.1	30,688.0
WY 1981	187.0	210.6	449.1	117.6	561.3	1,147.6	546.4	1,400.9	2,647.5	1,162.7	1,060.0	546.8	10,087.5
Project Rainfall (inches)													
Avg 1972 thru 1981	3.4	4.5	4.3	4.1	3.0	5.2	4.2	6.4	3.8	3.1	2.9	4.9	49.8
WY 1981	2.8	5.0	1.7	0.9	3.8	3.8	1.2	6.1	4.1	5.2	4.5	3.5	42.6
Deviation	-0.6	+0.5	-2.6	-3.2	+0.8	-1.4	-3.0	-0.3	+0.3	+2.1	+1.6	-1.4	-7.2
Pool Elevation													
End of Month	196.27	196.02	196.24	196.18	196.23	196.24	195.93	195.20	196.00	195.98	195.95	196.16	
Maximum	196.39	196.51	196.62	196.35	196.38	196.40	196.40	196.38	196.42	196.62	196.59	196.48	
Minimum	195.98	195.85	195.88	196.00	195.94	195.82	195.82	195.10	194.80	195.60	195.82	195.42	
Pool Content EOM (1,000 AC. FT.)	72.2	70.5	72.0	71.6	71.9	72.0	70.0	66.1	70.4	70.3	70.1	71.5	

LOCK AND DAM NO. 3	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,418.7	2,705.0	2,617.7	2,229.3	2,084.6	4,005.6	4,210.2	4,293.6	3,732.1	1,765.2	805.1	1,016.1	30,883.2
WY 1981	199.9	227.1	449.5	124.0	558.1	1,135.5	510.3	1,390.2	2,674.5	1,135.5	1,038.9	537.5	9,981.0
Project Rainfall (inches)													
Avg 1971 thru 1981	3.3	4.5	4.1	4.2	2.8	5.0	4.1	5.6	3.5	3.7	3.8	4.1	48.7
WY 1981	3.4	3.7	0.9	0.9	2.6	4.2	1.4	6.9	4.0	3.6	4.5	1.4	37.5
Deviation	+0.1	-0.8	-3.2	-3.3	-0.2	-0.8	-2.7	+1.3	+0.5	-0.1	+0.7	-2.7	-11.2
Pool Elevation													
End of Month	182.14	182.16	182.21	182.38	182.09	181.80	182.20	181.90	182.04	182.30	182.20	182.12	
Maximum	182.48	182.42	182.50	182.45	182.42	182.43	182.36	182.49	182.39	182.48	182.45	182.40	
Minimum	181.80	181.50	181.60	181.80	181.84	181.80	181.80	181.40	181.04	181.85	181.82	181.30	
Pool Content EOM (1,000 AC. FT.)	47.0	47.0	47.2	47.9	46.8	45.6	47.2	46.0	46.6	47.6	47.2	46.9	

LOCK AND DAM NO. 2	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Releases (1,000 AC. FT.)													
Avg 1970 thru 1981	1,414.9	2,707.9	2,717.7	2,221.9	2,157.1	4,094.9	4,357.6	3,773.8	3,753.7	1,760.7	806.9	1,836.4	31,603.5
WY 1981	239.2	317.0	511.7	143.2	587.5	1,176.4	579.0	1,420.0	2,709.8	1,121.3	1,083.0	562.9	10,451.0
Project Rainfall (inches)													
Avg 1971 thru 1981	3.4	5.6	4.7	5.3	3.8	7.4	4.6	5.8	4.5	3.2	3.3	4.0	55.6
WY 1981	3.8	4.[illegible]	0.5	1.2	3.4	5.7	0.5	4.8	3.4	4.9	4.3	3.6	50.8
Deviation	+0.4	-0.[illegible]	-4.2	-4.1	-0.4	-1.7	-4.1	-1.0	-1.1	+1.7	+1.0	-0.4	-4.8
Pool Elevation													
End of Month	162.29	162.25	162.20	162.08	162.07	162.14	162.09	161.80	162.36	162.44	162.60	162.21	
Maximum	162.40	162.41	162.38	162.37	162.35	162.36	162.72	162.43	162.36	162.44	162.98	163.06	
Minimum	162.00	162.03	162.06	162.08	161.98	161.98	161.96	161.80	161.11	161.24	162.44	160.78	
Pool Content EOM (1,000 AC. FT.)	113.3	112.9	112.3	111.0	110.9	111.7	111.1	108.0	114.1	115.0	116.8	112.4	

NORRELL LOCK NO. 1 (No basic data collected)

RED RIVER BASIN

ALTUS LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1938 THRU 1965	9.22	2.67	4.23	4.09	5.32	5.24	9.36	30.86	26.31	9.95	3.13	3.42	113.8
FY 1981	0.07	0.17	0.47	0.06	0.62	2.42	2.91	3.10	4.77	0.98	0.55	0.05	16.2
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.09	0.14	0.10	0.	0.24	1.02	0.83	29.83	9.53	14.84	11.32	0.83	68.8
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.06	0.89	0.79	0.62	0.82	1.14	2.02	3.93	3.22	2.22	2.57	2.34	22.62
FY 1981	0.70	0.14	1.07	0.	0.03	2.16	1.24	2.15	3.82	2.32	3.03	1.62	18.28
DEVIATION	-1.36	-0.75	0.28	-0.62	-0.79	1.02	-0.78	-1.78	0.60	0.10	0.46	-0.72	-4.34
POOL ELEVATION													
END OF MONTH	1533.99	1533.83	1533.89	1533.70	1533.72	1534.39	1534.97	1535.59	1536.64	1529.76	1526.26	1525.78	
MAXIMUM	1534.39	1533.99	1534.02	1533.89	1533.74	1534.41	1534.97	1535.59	1536.92	1536.65	1529.76	1526.26	
MINIMUM	1533.99	1533.83	1533.79	1533.65	1533.54	1533.68	1534.27	1534.97	1535.59	1529.76	1526.26	1525.78	
POOL CONTENT-EOM													
(1000AC.FT)	29.39	29.00	29.15	28.69	28.73	30.41	31.89	33.55	36.66	19.73	12.88	12.04	

RED RIVER BASIN

(Tom Steed)

MOUNTAIN PARK DAM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1971	1.51	0.33	0.39	0.17	0.26	0.42	1.07	4.13	3.56	1.24	0.77	1.45	15.3
FY 1981	0.06	0.18	1.00	0.03	0.57	1.19	5.89	3.53	5.85	1.47	0.11	0.	19.9
RELEASES(1000AC.FT.)													
AVG 1981 THRU 1981	0.	0.	0.	0.	0.	0.20	0.24	0.22	0.06	0.06	0.	0.	0.8
FY 1981	0.	0.	0.	0.	0.	0.20	0.24	0.22	0.06	0.06	0.	0.	0.8
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.59	1.34	1.13	1.01	1.17	1.55	2.46	4.67	3.40	2.28	2.27	2.98	26.85
FY 1981	0.60	0.34	1.83	0.15	0.47	2.90	3.68	5.43	4.00	3.06	1.18	1.05	24.69
DEVIATION	-1.99	-1.00	0.70	-0.86	-0.70	1.35	1.22	0.76	0.60	0.78	-1.09	-1.93	-2.16
POOL ELEVATION													
END OF MONTH	1407.56	1407.33	1407.33	1407.08	1406.96	1406.81	1407.45	1407.52	1407.87	1407.32	1406.43	1405.83	
MAXIMUM	1408.08	1407.56	1407.41	1407.33	1407.08	1406.99	1407.45	1407.64	1408.35	1407.87	1407.32	1406.43	
MINIMUM	1407.56	1407.33	1407.28	1407.06	1406.87	1406.81	1406.64	1407.44	1407.51	1407.32	1406.43	1405.77	
POOL CONTENT-EOM													
(1000AC.FT)	68.69	67.44	67.44	66.07	65.42	64.63	68.09	68.48	70.39	67.38	62.63	59.52	

RED RIVER BASIN

LAKE KEMP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1924 THRU 1969	24.65	5.98	7.93	3.65	5.93	7.30	13.74	40.22	26.79	17.23	20.99	29.27	202.7
FY 1981	5.43	2.24	5.25	0.38	12.17	7.06	10.03	19.50	53.63	0.10	2.86	0.06	119.2
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	3.78	0.64	2.74	0.	0.67	4.78	3.37	2.61	8.31	16.96	12.36	6.05	62.3
FY 1981	0.	0.	0.	0.	0.	0.	0.	2.43	1.38	13.16	11.30	8.25	36.5
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.51	1.06	0.97	0.82	0.99	1.10	1.94	3.56	2.70	2.01	2.15	2.88	22.69
FY 1981	0.69	0.45	0.90	0.	1.01	0.83	2.83	1.51	3.04	0.10	2.27	0.97	14.60
DEVIATION	-1.82	-0.61	-0.07	-0.82	0.02	-0.27	0.89	-2.05	0.34	-1.91	0.12	-1.91	-8.09
POOL ELEVATION													
END OF MONTH	1128.85	1129.04	1129.85	1129.87	1131.52	1132.23	1133.20	1134.80	1139.16	1136.88	1135.38	1134.17	
MAXIMUM	1129.17	1129.05	1129.91	1129.91	1131.52	1132.33	1133.20	1134.80	1139.49	1139.16	1136.88	1135.38	
MINIMUM	1128.84	1128.79	1129.02	1129.83	1129.84	1131.52	1132.03	1133.18	1134.80	1136.88	1135.38	1134.15	
POOL CONTENT-EOM													
(1000AC.FT)	68.70	114.35	119.45	119.58	130.54	135.48	142.66	155.54	200.32	174.82	160.62	150.31	

RED RIVER BASIN

WAURIKA LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1925 THRU 1974	7.99	3.48	3.20	1.76	3.79	5.40	7.98	25.23	17.20	3.40	1.71	4.30	85.4
FY 1981	0.58	0.65	1.46	0.27	1.99	3.21	4.45	8.31	19.15	2.28	2.57	3.72	48.7
RELEASES(1000AC.FT.)													
LAKE HAS NOT FILLED													
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.05	1.76	1.47	1.29	1.47	1.93	2.78	5.11	3.56	2.37	2.38	3.14	30.31
FY 1981	1.11	1.63	2.06	0.	1.42	3.25	3.50	6.38	5.67	3.45	3.23	3.11	34.81
DEVIATION	-1.94	-0.13	0.59	-1.29	-0.05	1.32	0.72	1.27	2.11	1.08	0.85	-0.03	4.50
POOL ELEVATION													
END OF MONTH	941.23	941.08	941.12	941.00	941.10	941.25	941.38	942.05	944.03	943.57	943.27	943.19	
MAXIMUM	941.62	941.26	941.32	941.14	941.13	941.53	941.39	942.07	944.24	944.06	943.57	943.65	
MINIMUM	941.17	941.08	941.04	940.99	940.88	941.08	941.13	941.35	942.03	943.42	943.27	943.19	
POOL CONTENT-EOM													
(1000AC.FT)	114.69	113.65	113.93	113.10	113.79	114.82	115.72	120.38	135.24	131.77	129.52	128.92	

FOSS RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1958	5.07	1.96	1.53	1.49	1.81	2.49	12.91	20.68	16.59	4.68	3.70	3.48	76.4
FY 1981	0.06	0.27	0.24	0.47	0.51	2.36	1.69	1.25	1.77	5.27	1.56	0.29	15.7
RELEASES(1000AC.FT.)													
AVG 1978 THRU 1981	3.03	0.23	0.21	0.21	0.63	0.20	0.19	1.00	6.77	1.60	0.48	0.27	14.8
FY 1981	0.31	0.30	0.31	0.31	0.28	0.31	0.30	0.31	0.30	0.31	0.31	0.30	3.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	1.98	1.08	0.76	0.63	0.88	1.26	2.29	4.05	3.14	2.00	2.49	2.27	22.83
FY 1981	1.07	0.29	1.08	0.	0.10	1.77	1.05	2.36	3.21	3.68	2.43	1.72	18.76
DEVIATION	-0.91	-0.79	0.32	-0.63	-0.78	0.51	-1.24	-1.69	0.07	1.68	-0.06	-0.55	-4.07
POOL ELEVATION													
END OF MONTH	1638.77	1638.49	1638.29	1638.10	1637.90	1637.94	1637.69	1637.40	1637.14	1637.23	1636.85	1636.33	
MAXIMUM	1639.33	1638.77	1638.49	1638.29	1638.10	1638.14	1637.94	1637.69	1637.53	1637.26	1637.23	1636.85	
MINIMUM	1638.77	1638.49	1638.29	1638.10	1637.89	1637.90	1637.63	1637.31	1637.10	1636.53	1636.83	1636.29	
POOL CONTENT-EOM													
(1000AC.FT)	157.02	155.30	154.07	152.90	151.69	151.93	150.44	148.70	147.15	147.68	145.43	142.40	

RED RIVER BASIN

FORT COBB RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1958	2.18	1.76	2.30	2.37	2.55	3.14	4.62	6.19	6.64	2.86	1.29	1.75	37.7
FY 1981	0.06	0.12	1.22	0.59	0.97	2.10	1.75	2.31	4.90	1.42	0.85	1.31	17.6
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.	0.	0.	0.	0.17	0.	0.	0.33	4.57	0.	0.	0.	5.1
FY 1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.47	1.37	1.19	0.99	1.11	1.60	2.63	4.62	3.25	2.37	2.50	3.17	27.27
FY 1981	0.73	0.36	1.85	0.	2.60	3.88	2.07	3.84	5.26	4.54	2.71	2.90	29.74
DEVIATION	-1.74	-1.01	0.66	-0.99	1.49	1.28	-0.56	-0.78	2.01	2.17	0.21	-0.27	2.47
POOL ELEVATION													
END OF MONTH	1338.65	1338.31	1338.31	1338.10	1338.00	1338.10	1337.98	1338.00	1338.62	1338.01	1337.50	1337.16	
MAXIMUM	1339.41	1338.66	1338.53	1338.32	1338.12	1338.20	1338.10	1338.14	1339.06	1338.70	1338.02	1337.70	
MINIMUM	1338.65	1338.27	1338.21	1338.06	1337.94	1337.97	1337.92	1337.93	1338.00	1337.83	1337.48	1337.16	
POOL CONTENT-EOM													
(1000AC.FT)	67.02	65.78	65.78	65.02	64.65	65.02	64.58	64.65	66.91	64.69	62.89	61.68	

RBUCKLE RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1963	3.40	2.70	3.30	3.30	5.50	5.20	8.80	14.00	8.40	3.70	2.70	4.50	65.5
FY 1981	0.11	0.06	1.67	0.06	1.24	3.19	0.88	7.57	9.35	0.73	0.21	0.38	25.5
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.15	0.18	0.16	0.14	0.11	0.12	2.59	4.70	7.78	0.14	0.14	0.17	16.4
FY 1981	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	5.98	0.06	0.06	0.06	6.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.16	2.32	2.10	1.76	2.21	2.90	3.95	5.55	3.86	2.57	2.84	3.80	37.02
FY 1981	2.56	1.86	2.64	0.18	2.56	2.39	1.98	8.00	2.84	3.85	2.48	3.42	34.76
DEVIATION	-0.60	-0.46	0.54	-1.58	0.35	-0.51	-1.97	2.45	-1.02	1.28	-0.36	-0.38	-2.26
POOL ELEVATION													
END OF MONTH	868.61	868.13	868.35	867.84	867.88	868.77	868.61	871.29	871.93	871.25	870.43	869.86	
MAXIMUM	869.20	868.61	868.61	868.35	867.88	868.85	868.79	871.29	873.65	871.93	871.25	870.52	
MINIMUM	868.61	868.13	868.06	867.84	867.61	867.88	868.57	868.42	871.29	871.10	870.43	869.86	
POOL CONTENT-EOM (1000AC.FT)	64.73	63.68	64.16	63.06	63.14	65.08	64.73	70.75	72.24	70.66	68.78	67.49	

LAKE TEXOMA	OCT	NOV	DEC	JA/	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1928 THRU 1978	274.37	187.93	142.53	124.95	183.17	240.24	358.25	792.18	596.41	204.88	113.70	208.05	3426.7
FY 1981	127.24	26.88	114.64	29.38	59.94	328.84	140.53	408.49	719.50	58.91	41.65	45.89	2101.9
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	93.99	76.63	87.44	104.75	82.70	55.92	100.33	272.72	602.97	139.77	136.89	106.11	1860.2
FY 1981	36.35	41.14	41.50	60.42	71.12	91.40	75.48	167.20	751.89	189.46	173.66	127.98	1827.6
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.58	1.38	1.23	1.13	1.28	1.62	2.52	4.28	3.30	2.25	2.34	2.92	26.83
FY 1981	1.18	0.85	1.25	0.05	1.22	2.39	3.03	4.62	3.74	2.20	2.75	1.75	25.03
DEVIATION	-1.40	-0.53	0.02	-1.08	-0.06	0.77	0.51	0.34	0.44	-0.05	0.41	-1.17	-1.80
POOL ELEVATION													
END OF MONTH	613.60	613.15	614.00	613.44	613.08	615.83	616.11	618.54	617.49	615.26	612.93	611.37	
MAXIMUM	613.77	613.64	614.23	614.00	613.52	616.10	616.36	618.54	620.68	617.49	615.29	612.93	
MINIMUM	612.88	613.14	613.09	613.41	612.74	613.08	615.65	616.05	617.49	615.26	612.93	611.37	
POOL CONTENT-EOM (1000AC.FT)	2368.32	2334.03	2398.80	2356.13	2328.70	2543.20	2566.32	2783.09	2687.40	2497.60	2317.40	2202.63	

PAT MAYSE LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1937 THRU 1965	3.26	6.19	5.71	7.14	12.51	10.72	16.31	16.77	10.73	3.95	1.85	3.16	98.3
FY 1981	5.05	0.16	7.69	0.19	1.35	5.68	5.34	15.52	30.40	0.65	0.03	0.02	72.1
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	0.01	0.03	0.78	0.76	2.62	4.61	9.17	5.12	8.07	3.05	0.60	0.	34.9
FY 1981	0.05	0.18	2.52	0.52	0.04	1.61	0.92	8.87	25.46	3.61	0.01	0.	43.8
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.81	3.32	3.15	2.75	3.10	3.75	4.85	5.27	4.06	3.36	2.71	4.18	43.31
FY 1981	2.86	1.26	1.84	0.52	1.17	3.68	2.79	3.95	3.32	1.21	1.59	0.68	24.87
DEVIATION	0.05	-2.06	-1.31	-2.23	-1.93	-0.07	-2.06	-1.32	-0.74	-2.15	-1.12	-3.50	-18.44
POOL ELEVATION													
END OF MONTH	451.09	450.82	451.32	451.00	450.90	451.20	451.47	452.16	452.26	450.97	450.36	449.76	
MAXIMUM	451.10	451.09	451.94	451.32	451.03	451.60	451.57	452.69	454.33	452.26	450.98	450.36	
MINIMUM	450.53	450.82	450.77	450.95	450.74	450.90	450.92	451.28	451.95	450.97	450.36	449.76	
POOL CONTENT-EOM													
(1000AC.FT)	125.05	123.44	126.45	124.50	123.91	125.72	127.37	131.59	132.21	124.32	120.72	117.71	

CLAYTON	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1978	7.87	15.55	21.19	22.40	27.25	30.85	40.45	38.60	19.51	7.16	2.72	10.29	245.84
FY 1981								11.72	9.23	1.46	3.01	0.37	
RELEASES(1000AC.FT.)	RESERVOIR OPERATED AS DETENTION BASIN ONLY. IMPOUNDMENT SCHEDULED TO BEGIN DEC 1982.												
RAINFALL (INCHES)													
AVG 1926 THRU 1978	3.20	3.46	3.04	3.02	3.51	3.42	5.20	6.71	3.92	3.14	3.24	4.30	46.16
FY 1981								8.47	4.09	4.75	5.00	1.63	
DEVIATION								1.76	0.17	1.61	1.76	-2.67	
POOL ELEVATION													
END OF MONTH								543.30	543.90	536.60	533.40	534.70	
MAXIMUM								550.00	555.00	538.00	539.00	535.60	
MINIMUM								535.80	534.90	533.00	533.40	532.00	
POOL CONTENTS-EOM													
(1000AC.FT.)								0.40	0.02	0.04	0.01	0.02	

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JAN 82

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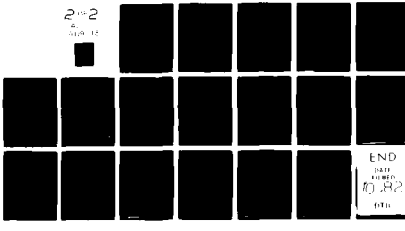


HUGO LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1926 THRU 1964	40.79	74.01	117.34	160.37	177.57	171.23	257.85	250.16	114.02	56.90	19.14	49.05	1485.4
FY 1981	114.24	32.05	116.72	14.78	75.86	166.97	62.08	172.58	264.44	36.55	16.64	4.68	1077.6
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	25.01	11.36	49.84	68.54	99.64	197.50	283.09	195.29	139.49	21.89	17.80	13.10	1122.6
FY 1981	108.65	32.93	126.24	14.44	66.73	165.48	62.63	152.88	274.68	33.77	19.17	13.07	1070.7
RAINFALL(INCHES)													
AVG 1930 THRU 1977	3.67	3.76	3.20	2.89	3.30	3.92	5.12	5.99	4.33	3.61	3.42	4.55	47.76
FY 1981	4.10	1.34	2.31	0.42	2.96	2.87	2.72	7.22	4.22	3.91	4.62	1.72	38.41
DEVIATION	0.43	-2.42	-0.89	-2.47	-0.34	-1.05	-2.40	1.23	-0.11	0.30	1.20	-2.83	-9.35
POOL ELEVATION													
END OF MONTH	405.47	405.25	404.67	404.65	405.20	404.98	404.57	405.63	404.42	404.19	403.56	402.51	
MAXIMUM	407.26	405.47	408.48	404.68	406.71	408.50	405.14	406.87	412.64	405.09	404.27	403.57	
MINIMUM	404.48	404.36	404.63	404.34	404.49	404.35	404.46	404.36	404.40	404.14	403.56	402.51	
POOL CONTENT-EOM (1000AC.FT)	170.69	167.70	159.84	159.58	167.02	164.03	158.49	172.87	156.47	153.36	145.34	132.37	

RED RIVER BASIN

PINE CREEK LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1929 THRU 1973	21.89	37.76	59.17	64.45	81.41	81.35	99.21	108.20	39.88	18.91	8.56	18.28	639.1
FY 1981	59.09	15.02	52.18	7.01	49.45	65.38	27.31	101.63	139.87	28.29	11.08	5.26	561.6
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	20.39	5.70	27.19	34.95	40.47	87.84	95.16	78.08	58.47	11.58	6.78	5.39	472.0
FY 1981	105.83	14.27	51.02	7.38	44.54	67.71	25.86	94.38	143.19	39.46	10.75	12.50	616.9
RAINFALL(INCHES)													
AVG 1930 THRU 1977	2.75	3.90	3.59	3.17	3.52	4.25	5.24	6.12	4.36	3.91	3.66	4.63	49.10
FY 1981	3.94	1.08	2.25	0.31	2.56	1.79	2.74	5.18	2.70	4.25	4.32	2.28	33.40
DEVIATION	1.19	-2.82	-1.34	-2.86	-0.96	-2.46	-2.50	-0.94	-1.66	0.34	0.66	-2.35	-15.70
POOL ELEVATION													
END OF MONTH	443.63	443.63	443.78	443.62	444.33	443.68	443.68	444.82	443.45	440.50	440.18	438.06	
MAXIMUM	451.80	443.90	448.03	443.83	446.41	447.55	444.95	448.40	457.37	444.42	440.70	440.18	
MINIMUM	443.47	443.50	443.45	443.58	443.22	443.55	443.44	443.54	443.45	440.50	440.02	438.06	
POOL CONTENT-EOM (1000AC.FT)	78.37	78.37	79.12	78.32	81.94	78.62	78.62	84.50	77.48	63.82	62.45	53.98	

BROKEN BOW LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL.	AUG	SEP	TOTAL
INFLOWS(1000AC.FT.)													
AVG 1930 THRU 1978	33.70	57.90	92.11	112.65	115.23	140.07	130.09	131.16	48.14	25.09	13.96	23.21	923.3
FY 1981	35.83	16.97	74.16	6.15	83.73	98.14	49.68	159.69	175.06	66.05	9.24	4.28	779.0
RELEASES(1000AC.FT.)													
AVG 1976 THRU 1981	24.93	22.88	44.67	63.75	49.43	82.04	112.63	76.53	105.31	54.49	33.79	23.47	693.9
FY 1981	14.25	16.35	21.34	10.98	11.17	126.17	19.61	127.24	186.74	102.83	58.50	61.55	756.7
RAINFALL(INCHES)													
AVG 1930 THRU 1977	4.20	4.08	4.12	3.76	3.85	4.86	5.32	4.15	4.38	4.25	3.82	4.53	53.32
FY 1981	2.69	1.20	2.55	0.71	3.28	3.12	2.79	5.69	5.74	7.18	4.52	2.47	41.94
DEVIATION	-1.51	-2.88	-1.57	-3.05	-0.57	-1.74	-2.53	-0.46	1.36	2.93	0.70	-2.06	-11.38
POOL ELEVATION													
END OF MONTH	590.71	590.65	594.48	594.02	599.21	596.94	598.83	600.03	599.05	595.67	591.53	586.72	
MAXIMUM	590.74	590.87	594.97	594.48	599.21	601.65	598.93	601.71	607.31	601.02	595.81	591.53	
MINIMUM	589.21	590.53	590.22	594.01	594.02	596.54	596.91	598.83	599.05	595.48	591.53	586.72	
POOL CONTENT-EOM (1000AC.FT)	798.55	797.77	848.56	842.34	913.98	882.20	908.61	925.61	911.71	864.74	809.27	747.64	

DEQUEEN LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1930 thru 1981	5.9	13.0	20.6	24.6	24.6	30.2	29.5	29.4	11.0	5.4	4.0	6.4	204.4
WY 1981	6.3	5.8	20.4	1.6	15.7	21.3	9.7	32.2	51.7	9.6	4.0	2.3	180.6
Releases (1,000 AC. FT.)													
Avg 1979 thru 1981	8.6	10.2	18.5	17.0	16.2	26.0	32.6	27.8	34.1	6.2	9.4	1.4	208.0
WY 1981	24.2	6.2	20.2	1.4	14.4	22.2	8.7	26.3	54.6	9.1	3.4	1.6	192.3
Basin Rainfall (inches)													
Avg 1930 thru 1981	3.8	4.2	4.1	3.8	3.8	4.9	5.4	6.3	4.2	4.3	3.4	4.4	52.6
WY 1981	3.1	2.4	3.1	0.5	3.0	3.6	2.8	8.6	6.9	6.2	4.1	3.6	47.9
Deviation	-0.7	-1.8	-1.0	-3.3	-0.8	-1.3	-2.6	+2.3	+2.7	+1.9	+0.7	-0.8	-4.7
Pool Elevation													
End of Month	437.35	436.98	437.03	437.11	437.77	437.04	437.33	440.45	436.98	436.87	436.88	437.00	
Maximum	446.93	437.52	444.26	437.16	440.36	440.58	438.14	440.96	455.29	438.98	437.63	437.24	
Minimum	435.88	436.98	436.85	437.03	437.09	436.98	436.57	437.29	436.94	436.81	436.78	436.86	
Pool Content EOM (1,000 AC. FT.)	35.5	34.9	35.0	35.1	36.2	35.0	35.5	41.0	34.9	34.7	34.7	34.9	

GILLHAM LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1930 thru 1981	11.5	23.5	38.1	47.0	43.6	55.6	49.9	51.2	19.8	10.4	5.2	10.1	365.9
WY 1981	8.8	7.1	33.1	2.7	5.6	40.6	32.8	56.7	70.8	32.0	7.9	2.1	300.2
Releases (1,000 AC. FT.)													
Avg 1977 thru 1981	5.0	14.5	29.2	28.0	25.3	60.3	76.9	47.9	36.8	9.2	10.7	3.3	347.1
WY 1981	15.6	7.7	33.2	3.3	22.0	43.0	35.1	46.8	79.9	28.4	10.8	2.8	328.6
Basin Rainfall (inches)													
Avg 1930 thru 1981	3.9	4.4	4.2	3.9	4.0	5.1	5.4	6.3	4.6	4.4	3.4	4.6	54.2
WY 1981	4.4	2.4	3.4	0.8	3.4	3.9	3.1	9.0	6.8	9.4	3.2	1.5	51.3
Deviation	+0.5	-2.0	-0.8	-3.1	-0.6	-1.2	-2.3	+2.7	+2.2	+5.0	-0.2	-2.9	-2.9
Pool Elevation													
End of Month	502.68	502.13	502.00	501.46	505.93	504.10	502.17	508.56	502.00	504.14	501.79	500.98	
Maximum	507.53	502.68	515.07	502.00	508.12	512.65	509.23	509.72	529.19	510.99	504.52	501.87	
Minimum	501.82	502.00	501.69	501.44	501.46	502.08	501.96	502.16	502.00	502.00	501.79	500.98	
Pool Content EOM (1,000 AC. FT.)	34.0	33.2	33.0	32.3	38.7	36.0	33.3	42.8	33.0	36.0	32.7	31.7	

DIERKS LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1930 thru 1981	4.1	9.4	15.3	19.9	17.8	22.4	19.8	21.6	7.3	4.1	1.2	3.3	146.2
WY 1981	12.2	3.2	15.0	1.1	11.0	12.9	6.7	19.4	44.5	15.1	1.7	0.9	143.7
Releases (1,000 AC. FT.)													
Avg 1977 thru 1981	3.8	5.9	10.6	10.5	10.6	20.7	20.2	19.2	13.9	8.0	3.0	0.8	127.2
WY 1981	16.9	3.3	15.0	0.9	9.9	12.5	7.2	13.9	27.5	34.9	2.0	0.9	144.9
Basin Rainfall (inches)													
Avg 1930 thru 1981	4.4	4.5	4.3	4.0	4.1	5.1	5.3	6.2	4.8	4.0	3.2	4.0	53.9
WY 1981	5.2	2.3	3.3	0.7	3.9	4.0	2.5	8.1	9.9	8.2	2.7	1.1	51.9
Deviation	+0.8	-2.2	-1.0	-3.3	-0.2	-1.1	-2.8	+1.9	+5.1	+4.2	-0.5	-2.9	-2.0
Pool Elevation													
End of Month	526.29	526.06	526.00	526.04	526.71	526.80	526.08	529.67	538.93	526.69	526.05	525.77	
Maximum	531.07	526.72	532.99	526.04	528.68	529.61	526.80	529.67	546.51	542.89	526.69	526.06	
Minimum	525.97	526.03	525.94	525.95	526.02	526.02	526.04	525.99	529.59	526.69	525.93	525.77	
Pool Content EOM (1,000 AC. FT.)	30.1	29.7	29.7	29.7	30.6	30.8	29.8	34.9	51.1	30.6	29.7	29.3	

MILLWOOD LAKE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1,000 AC. FT.)													
Avg 1929 thru 1981	112.4	239.9	265.7	445.5	489.1	576.5	613.2	663.3	287.7	116.7	70.3	100.0	3,980.3
WY 1981	311.0	118.2	277.7	33.1	193.7	446.6	149.0	511.7	950.8	346.4	96.2	90.8	3,525.2
Releases (1,000 AC. FT.)													
Avg 1976 thru 1981	97.2	145.5	208.7	291.1	298.7	448.6	573.6	434.4	398.5	135.4	67.9	69.7	3,169.3
WY 1981	358.9	124.2	278.9	30.8	186.4	335.4	147.4	493.3	934.7	352.8	86.4	79.8	3,409.0
Intervening Basin Rainfall (inches)[3]													
Avg 1930 thru 1981	3.6	4.2	3.8	3.6	3.7	4.4	4.8	5.7	3.9	3.4	2.9	3.9	47.9
WY 1981	3.6	3.7	1.7	0.9	3.5	2.4	1.6	7.1	7.7	5.1	3.9	2.8	46.0
Deviation	0.0	-0.5	-2.1	-2.7	-0.2	-2.0	-3.2	+1.4	+3.8	+1.7	+1.0	-1.1	-1.9
Pool Elevation													
End of Month	255.74	255.36	255.21	255.26	255.50	259.61	259.38	259.72	259.82	259.22	259.20	259.29	
Maximum	259.36	256.33	258.15	255.27	256.65	259.65	259.61	260.09	264.76	261.25	259.44	259.38	
Minimum	255.29	255.34	255.14	255.06	255.10	255.50	259.20	259.14	259.25	259.05	259.15	259.00	
Pool Content EOM (1,000 AC. FT.)	117.0	109.0	105.8	106.9	111.9	217.4	210.5	220.7	223.7	205.7	205.1	207.8	

RED RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
HEIGHT PEMBINA LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1957 THRU 1961	63	160	226	170	234	261	293	419	185	62	18	40	2133
FY 1961	39	24	87	10	41	71	22	346	814	79	6	2	1541
RELEASES (1000 AC.FT.)													
AVG 1957 THRU 1961	105	136	196	213	221	240	207	274	239	152	51	50	2066
FY 1961	58	52	119	1	12	60	1	86	610	340	6	8	1355
RAINFALL (INCHES)													
AVG 1957 THRU 1977	3.66	3.29	3.65	2.47	3.06	3.93	4.87	4.44	4.25	3.40	2.67	4.86	44.57
FY 1961	2.99	2.79	2.08	0.93	2.55	3.15	1.65	8.64	7.25	3.13	2.50	1.66	39.52
DEVIATION	-0.69	-0.50	-1.57	-1.54	-0.51	-0.78	-3.02	4.40	3.00	-0.27	-0.17	-3.00	-4.65
POOL ELEVATION													
END OF MONTH	223.42	221.97	220.12	220.11	221.07	221.07	221.45	229.45	233.76	226.48	225.81	225.05	
MAXIMUM	225.19	223.42	222.53	220.12	221.09	222.91	221.60	229.45	235.49	233.76	226.46	225.81	
MINIMUM	223.42	221.97	220.12	220.01	220.11	220.89	221.07	221.40	228.90	226.48	225.81	225.05	
POOL CONTENT ECA (1000 AC.FT.)	225	189	147	148	168	168	177	416	597	314	293	270	

RED RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LAKE O THE PINES													
INFLOWS (1000 AC.FT.)													
AVG 1956 THRU 1961	9	25	47	54	57	75	60	63	30	10	5	14	469
FY 1961	6	9	9	12	14	26	14	106	157	18	5	1	377
RELEASES (1000 AC.FT.)													
AVG 1958 THRU 1961	9	15	43	50	54	70	55	56	34	15	9	14	430
FY 1961	0	5	5	0	7	19	11	61	149	18	2	7	284
RAINFALL (INCHES)													
AVG 1957 THRU 1977	3.07	3.53	3.69	2.59	3.16	3.73	4.50	4.01	3.73	2.79	2.33	3.93	41.46
FY 1961	3.22	3.28	1.61	1.00	2.14	3.10	1.39	9.61	6.77	2.26	2.61	2.16	35.17
DEVIATION	0.15	-0.25	-2.08	-1.59	-1.02	-0.63	-3.51	5.60	3.04	-0.53	0.28	-1.75	-2.29
POOL ELEVATION													
END OF MONTH	228.35	228.46	226.51	226.70	228.60	228.72	228.54	230.41	230.36	229.91	229.56	228.75	
MAXIMUM	228.48	228.62	228.60	228.70	228.59	229.09	228.66	231.86	233.10	230.36	229.93	229.58	
MINIMUM	228.15	228.32	228.46	228.50	228.70	228.53	228.51	228.54	230.37	229.91	229.56	228.75	
POOL CONTENT ECA (1000 AC.FT.)	253	254	255	259	260	259	256	292	291	282	275	260	

NECHES RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
SAM RAYBURN RESERVOIR													
INFLOWS (1000 AC.FT.)													
AVG 1906 THRU 1961	39	87	174	258	259	284	284	313	136	58	34	33	1959
FY 1981	1	10	19	33	61	93	38	116	240	64	6	162	837
RELEASES (1000 AC.FT.)													
AVG 1965 THRU 1981	51	43	63	56	119	151	155	213	194	146	144	90	1467
FY 1981	105	92	102	75	4	0	58	35	1	4	107	66	653
RAINFALL (INCHES)													
AVG 1931 THRU 1960	3.15	4.67	5.02	4.65	4.16	3.69	4.64	5.22	3.55	3.72	2.93	2.67	46.29
FY 1981	1.99	3.39	0.64	1.64	2.51	3.21	2.19	6.86	6.77	3.60	1.22	2.63	36.85
DEVIATION	-1.16	-1.28	-4.16	-3.01	-1.67	-0.46	-2.45	1.64	3.22	-0.12	-1.71	-0.24	-11.44
POOL ELEVATION													
END OF MONTH	156.07	155.00	153.89	153.22	153.71	154.52	153.94	154.33	156.58	156.75	155.16	155.84	
MAXIMUM	157.56	156.07	155.12	153.90	153.80	154.65	154.70	154.33	156.64	157.02	156.76	156.72	
MINIMUM	156.07	154.96	153.89	153.18	153.21	153.69	153.70	153.80	154.23	156.58	155.04	155.12	
POOL CONTENT EOM (1000 AC.FT.)	2036	1941	1644	1677	1628	1899	1848	1682	2085	2101	1956	2017	

NECHES RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
B.A. STEINHAGEN LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1906 THRU 1961	73	152	287	442	443	500	516	606	291	140	80	66	3598
FY 1981	112	103	115	94	41	37	81	77	275	123	131	107	1296
RELEASES (1000 AC.FT.)													
AVG 1951 THRU 1981	95	131	236	320	346	385	409	604	298	177	120	106	3229
FY 1981	109	117	118	96	6	75	61	56	255	154	122	112	1285
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.92	4.25	4.71	4.10	3.59	3.92	4.60	5.00	3.43	3.27	2.81	2.85	45.45
FY 1981	2.13	3.23	1.05	1.88	2.23	3.34	2.11	7.23	6.96	4.01	1.43	2.46	40.08
DEVIATION	-0.79	-1.02	-3.66	-2.22	-1.36	-0.58	-2.49	2.23	5.53	0.74	-1.38	-0.37	-5.37
POOL ELEVATION													
END OF MONTH	81.97	80.59	80.20	79.87	82.59	78.72	80.50	81.81	82.99	79.85	80.26	79.32	
MAXIMUM	82.21	83.15	81.26	80.63	82.20	83.06	81.35	83.69	83.64	83.21	82.70	81.91	
MINIMUM	80.54	80.24	80.09	78.88	79.87	78.72	78.13	80.44	80.73	79.69	79.66	79.05	
POOL CONTENT EOM (1000 AC.FT.)	81	65	61	58	89	48	64	79	94	58	62	53	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
ATHENS LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	2	2	2	3	6	7	9	13	5	1	1	2	53
FY 1981	0	0	1	1	1	4	2	4	2	0	1	1	17
RELEASES (1000 AC.FT.)													
AVG 1952 THRU 1981	1	2	2	2	4	5	5	11	9	1	1	1	44
FY 1981	2	1	1	0	0	0	0	0	1	1	1	1	8
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.83	2.22	2.30	2.06	2.06	2.36	3.79	4.75	3.28	2.16	2.10	2.44	32.35
FY 1981	0.78	1.26	2.01	0.39	0.71	3.99	2.47	3.99	3.85	1.81	1.88	2.97	26.11
DEVIATION	-2.05	-0.96	-0.29	-1.67	-1.35	1.63	-1.32	-0.76	0.57	-0.35	-0.22	0.53	-6.24
POOL ELEVATION													
END OF MONTH	689.71	689.38	689.36	689.33	689.40	690.31	690.52	691.19	691.16	690.15	689.57	689.09	
MAXIMUM	690.66	689.71	689.56	689.37	689.40	690.31	690.57	691.23	691.55	691.17	690.15	689.87	
MINIMUM	689.71	689.38	689.34	689.31	689.32	689.44	690.31	690.23	691.16	690.15	689.57	689.09	
POOL CONTENT EOM (1000 AC.FT.)	73	72	72	72	72	75	76	78	78	74	72	71	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LEWISVILLE LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	25	27	26	24	40	57	75	87	50	18	11	29	469
FY 1981	56	5	32	4	6	79	24	137	92	21	1	12	469
RELEASES (1000 AC.FT.)													
AVG 1954 THRU 1981	22	31	35	22	21	33	33	68	71	33	22	20	411
FY 1981	10	11	14	8	11	9	10	6	55	25	22	15	196
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.96	2.33	2.53	2.14	2.66	2.53	4.08	5.05	3.88	2.57	2.43	2.88	36.04
FY 1981	3.83	1.49	2.01	0.47	1.15	4.30	3.47	7.88	3.74	2.27	1.41	3.53	35.55
DEVIATION	0.87	-0.84	-0.52	-1.67	-1.51	1.77	-0.61	2.83	-0.14	-0.30	-1.02	0.65	-0.49
POOL ELEVATION													
END OF MONTH	504.73	504.01	504.99	504.52	503.95	508.06	508.41	514.52	515.61	514.71	513.06	512.34	
MAXIMUM	504.73	504.73	505.36	504.99	504.53	508.06	508.45	514.52	517.49	516.50	514.71	513.10	
MINIMUM	501.85	504.01	503.76	504.52	503.86	503.95	507.73	508.41	514.52	514.71	513.06	512.34	
POOL CONTENT EOM (1000 AC.FT.)	265	255	269	262	254	318	324	447	472	451	414	398	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
GRAPEVINE LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	6	5	7	9	13	16	24	27	14	5	2	6	134
FY 1981	1	0	2	0	1	14	5	36	31	2	0	1	93
RELEASES (1000 AC.FT.)													
AVG 1952 THRU 1981	4	4	8	6	5	5	10	12	13	10	8	5	90
FY 1981	1	1	1	1	1	1	1	1	2	2	2	2	16
RAINFALL (INCHES)													
AVG 1931 THRU 1960	3.13	2.19	2.24	1.90	2.26	2.26	3.89	4.46	3.28	2.56	2.48	2.78	33.43
FY 1981	2.62	1.31	1.92	0.33	0.88	4.48	3.35	8.07	3.76	1.17	1.47	4.61	33.97
DEVIATION	-0.51	-0.88	-0.32	-1.57	-1.38	2.22	-0.54	3.61	0.48	-1.39	-1.01	1.83	0.54
POOL ELEVATION													
END OF MONTH	522.61	522.15	522.11	521.71	521.47	523.65	523.91	529.42	533.49	532.81	531.84	531.15	
MAXIMUM	522.97	522.61	522.41	522.11	521.75	523.65	523.91	529.45	533.68	533.67	532.81	531.89	
MINIMUM	522.61	522.15	522.06	521.70	521.39	521.47	523.48	523.91	529.45	532.81	531.84	531.15	
POOL CONTENT EOM (1000 AC.FT.)	104	102	102	100	99	110	111	143	170	166	159	154	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LAVON LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	10	18	23	25	34	37	53	63	36	13	3	12	327
FY 1981	8	3	15	5	6	32	20	56	132	22	2	4	305
RELEASES (1000 AC.FT.)													
AVG 1953 THRU 1981	13	12	22	18	13	20	16	54	34	11	6	4	223
FY 1981	0	0	0	0	0	0	0	0	0	7	0	0	7
RAINFALL (INCHES)													
AVG 1931 THRU 1960	3.28	2.87	2.99	2.47	2.82	3.37	4.57	5.24	3.99	2.86	2.71	2.67	39.84
FY 1981	3.44	1.43	2.00	0.74	1.01	4.18	3.54	7.22	6.17	2.70	1.15	2.41	35.99
DEVIATION	0.16	-1.44	-0.99	-1.73	-1.81	0.81	-1.03	1.98	2.18	-0.16	-1.56	-0.26	-3.85
POOL ELEVATION													
END OF MONTH	483.54	483.16	483.46	483.21	482.98	484.15	484.45	486.73	492.44	491.98	490.89	490.23	
MAXIMUM	483.92	483.54	483.73	483.46	483.22	484.15	484.74	486.73	492.59	493.16	491.98	490.90	
MINIMUM	483.40	483.13	483.07	483.16	482.86	482.98	483.93	484.45	486.73	491.98	490.89	490.23	
POOL CONTENT EOM (1000 AC.FT.)	297	290	295	291	287	307	312	353	466	456	434	420	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
NAVARRO MILLS LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1908 THRU 1981	5	6	8	10	10	12	19	29	14	4	1	3	121
FY 1981	0	1	2	0	0	4	1	7	83	0	1	1	100
RELEASES (1000 AC.FT.)													
AVG 1963 THRU 1981	2	8	7	5	6	7	9	17	22	7	0	2	92
FY 1981	0	0	0	0	0	0	1	0	40	23	0	0	64
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.64	2.60	2.61	2.62	2.80	2.67	4.36	4.98	3.50	1.82	1.60	2.64	34.84
FY 1981	0.54	1.95	2.42	0.94	1.36	3.92	2.09	4.93	11.61	2.11	1.16	2.28	35.31
DEVIATION	-2.10	-0.65	-0.19	-1.68	-1.44	1.25	-2.27	-0.05	8.11	0.29	-0.44	-0.36	0.47
POOL ELEVATION													
END OF MONTH	421.17	420.88	420.97	420.65	420.37	420.88	420.34	421.52	428.91	424.10	423.50	423.09	
MAXIMUM	421.71	421.17	421.33	420.97	420.69	421.19	420.88	421.76	433.06	428.91	424.10	423.66	
MINIMUM	421.17	420.87	420.79	420.55	420.34	420.37	420.34	420.23	421.48	424.10	423.41	423.09	
POOL CONTENT EOM (1000 AC.FT.)	41	40	41	39	38	40	38	43	82	55	52	50	

TRINITY RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
BARDWELL LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1938 THRU 1981	3	3	4	4	6	7	11	14	7	2	1	2	64
FY 1981	0	0	1	1	1	2	2	12	44	3	1	1	68
RELEASES (1000 AC.FT.)													
AVG 1965 THRU 1981	1	5	3	4	5	6	7	13	12	2	0	1	59
FY 1981	0	0	0	0	0	0	0	0	23	19	0	0	42
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.90	2.73	2.94	2.53	2.81	2.73	4.11	4.81	3.09	1.98	2.16	2.74	35.53
FY 1981	0.54	1.47	2.26	0.94	0.97	3.71	1.90	7.56	10.51	2.42	2.15	1.53	35.96
DEVIATION	-2.36	-1.26	-0.68	-1.59	-1.84	0.98	-2.21	2.75	7.42	0.44	-0.01	-1.21	0.43
POOL ELEVATION													
END OF MONTH	418.01	417.81	417.94	417.90	417.87	418.08	416.29	421.33	426.28	421.55	421.10	420.73	
MAXIMUM	418.54	418.01	418.10	417.95	417.91	418.08	418.34	421.33	430.07	426.88	421.55	421.25	
MINIMUM	418.01	417.79	417.80	417.85	417.79	417.67	418.08	418.24	421.33	421.55	421.09	420.73	
POOL CONTENT EOM (1000 AC.FT.)	42	42	42	42	42	42	43	53	73	54	53	51	

SAN JACINTO RIVER BASIN

BARKER RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg 1945 thru 1981	5.4	5.5	6.0	9.9	7.5	3.6	5.5	7.7	10.5	7.5	3.7	7.7	80.5
FY 1981	6.9	0.6	0.7	2.6	1.2	1.4	3.1	6.2	12.2	19.9	18.4	19.5	92.7
Releases (1000 Ac. Ft.)													
Aug. 1964 thru 1981	7.1	6.4	5.0	8.5	8.6	4.8	4.7	9.0	10.0	7.5	3.5	9.5	84.6
FY 1981	7.0	0.6	0.7	2.6	1.2	1.4	3.1	5.9	9.2	22.8	1.8	33.2	89.5
Rainfall (Inches)													
Aug. 1945 thru 1981	3.60	3.30	3.33	3.13	2.96	3.21	3.34	4.39	3.87	3.16	3.79	4.25	42.33
FY 1981	2.44	1.75	1.06	2.47	2.22	1.64	1.92	5.18	6.14	5.82	8.11	5.29	44.04
Pool Elevation													
End of Month	73.51	73.34	73.23	74.19	73.64	73.74	73.85	74.06	85.46	74.00	89.20	74.30	
Maximum	83.23	74.47	75.88	81.05	75.24	78.49	81.31	86.18	85.47	88.49	89.20	92.32	
Minimum	73.46	73.26	73.23	73.21	73.27	73.61	73.70	73.82	73.84	74.00	73.78	74.30	
Pool Content E.O.M. (1000 Ac. Ft.)	0	0	0	0	0	0	0	0	3.1	0	12.5	0	

ADDICKS RESERVOIR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Aug. 1948 thru 1981	6.1	5.4	6.3	6.5	7.0	3.2	5.9	7.5	7.4	5.4	5.2	6.7	72.6
FY 1981	18.5	0.7	1.9	4.0	2.1	2.2	4.0	14.8	10.5	17.3	22.1	19.7	117.8
Releases (1000 Ac. Ft.)													
Aug. 1964 thru 1981	8.3	6.7	4.9	7.7	7.4	3.5	5.0	9.1	7.5	5.7	3.6	8.3	77.7
FY 1981	18.6	0.7	1.9	4.0	2.1	2.2	4.0	10.6	9.2	18.8	1.6	40.0	113.7
Rainfall (Inches)													
Aug. 1948 thru 1981	3.82	3.31	3.42	3.04	3.16	2.13	3.48	4.11	3.75	3.18	3.34	4.48	41.22
FY 1981	2.45	1.92	1.12	1.63	2.11	1.48	2.11	5.43	4.34	5.35	7.96	4.64	40.54
Pool Elevation													
End of Month	72.35	71.35	71.50	75.79	72.14	71.61	71.79	72.53	85.55	71.80	94.14	71.90	
Maximum	88.86	72.65	79.05	83.60	84.96	79.98	83.42	91.27	86.24	90.53	94.14	97.36	
Minimum	71.81	70.23	71.00	71.47	72.14	71.57	71.58	71.65	71.64	71.80	71.74	71.90	
Pool Content (1000 Ac. Ft.)	0	0	0	0	0	0	0	0	1.5	0	17.3	0	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
WHITNEY LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1899 THRU 1981	109	67	68	56	60	68	137	274	162	96	73	109	1279
FY 1981	223	17	52	45	21	72	38	65	208	49	17	7	814
RELEASES (1000 AC.FT.)													
AVG 1951 THRU 1981	78	50	39	50	43	55	62	204	164	76	53	72	946
FY 1981	24	21	45	63	48	35	33	41	172	0	47	25	554
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.88	1.94	2.16	1.96	2.25	2.06	3.49	4.76	2.97	2.07	1.81	2.76	31.11
FY 1981	0.42	1.62	2.17	0.63	7.22	3.76	1.97	2.95	6.98	2.20	2.52	1.51	33.95
DEVIATION	-2.46	-0.32	0.01	-1.33	4.97	1.70	-1.52	-1.81	4.01	0.13	0.71	-1.25	2.84
POOL ELEVATION													
END OF MONTH	532.56	532.12	532.26	531.33	529.92	531.28	531.17	531.74	532.83	531.93	530.03	528.73	
MAXIMUM	532.90	532.64	532.60	532.27	531.34	531.44	531.29	531.99	537.47	533.47	531.95	531.21	
MINIMUM	522.90	532.12	531.91	531.32	529.81	529.82	531.06	531.13	531.63	531.93	530.03	528.73	
POOL CONTENT EOM (1000 AC.FT.)	617	607	610	589	558	588	585	598	623	602	560	532	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
WACO LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1907 THRU 1981	25	16	21	18	24	26	47	70	31	14	8	17	317
FY 1981	1	1	4	1	3	13	8	7	153	13	3	3	210
RELEASES (1000 AC.FT.)													
AVG 1965 THRU 1981	10	15	14	17	21	29	38	76	32	17	3	6	278
FY 1981	0	1	0	0	0	0	0	0	110	24	0	0	135
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.58	2.19	2.50	2.26	2.39	2.09	3.83	4.83	2.88	2.14	1.67	3.00	32.36
FY 1981	0.45	2.07	2.30	0.72	1.26	4.07	1.80	3.09	8.70	1.76	1.61	2.25	30.08
DEVIATION	-2.13	-0.12	-0.20	-1.54	-1.13	1.98	-2.03	-1.74	5.82	-0.38	-0.06	-0.75	-2.28
POOL ELEVATION													
END OF MONTH	451.04	450.40	450.46	450.15	450.10	451.46	451.85	452.04	457.15	454.59	453.89	453.54	
MAXIMUM	451.76	451.04	450.73	450.46	450.18	451.46	451.86	452.11	463.50	457.40	454.59	454.09	
MINIMUM	451.01	450.39	450.28	450.13	450.07	450.10	451.46	451.62	451.97	454.59	453.86	453.54	
POOL CONTENT EOM (1000 AC.FT.)	122	117	118	116	116	124	127	128	165	146	141	139	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
PROCTOR LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1922 THRU 1981	3	2	1	3	2	5	5	12	4	1	1	3	42
FY 1981	0	1	1	1	1	2	1	2	8	0	0	1	18
RELEASES (1000 AC.FT.)													
AVG 1963 THRU 1981	3	3	2	3	7	5	10	11	9	7	4	2	66
FY 1981	0	0	0	0	0	0	0	0	0	2	3	2	7
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.71	1.66	1.76	1.65	1.69	1.55	3.06	4.68	2.75	2.08	1.65	2.73	27.97
FY 1981	0.32	1.90	2.31	0.66	0.75	3.61	1.45	3.59	5.74	1.28	2.04	2.21	25.86
DEVIATION	-2.39	0.24	0.55	-0.99	-0.94	2.06	-1.61	-1.09	2.99	-0.80	0.39	-0.52	-2.11
POOL ELEVATION													
END OF MONTH	1157.06	1156.80	1156.86	1156.75	1156.76	1156.81	1156.50	1156.44	1157.98	1156.80	1155.26	1154.46	
MAXIMUM	1157.58	1157.04	1157.03	1156.86	1156.76	1157.14	1156.81	1156.67	1158.33	1158.08	1156.80	1155.26	
MINIMUM	1157.06	1156.80	1156.70	1156.62	1156.61	1156.63	1156.50	1156.21	1156.38	1156.80	1155.26	1154.46	
POOL CONTENT EOM (1000 AC.FT.)	39	39	39	38	38	39	37	37	43	39	34	31	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
BELTON LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1908 THRU 1981	31	21	31	31	36	37	65	103	49	24	14	26	468
FY 1981	0	2	4	2	4	15	14	11	147	18	7	10	234
RELEASES (1000 AC.FT.)													
AVG 1954 THRU 1981	25	24	20	27	27	39	34	61	68	46	14	9	394
FY 1981	2	2	1	1	1	1	3	1	7	87	10	4	120
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.61	2.11	2.28	2.10	2.21	1.96	3.56	4.66	2.89	2.07	1.69	2.92	31.06
FY 1981	0.54	2.33	1.91	0.80	1.45	4.09	2.09	3.45	8.17	1.41	2.77	2.76	31.77
DEVIATION	-2.07	0.22	-0.37	-1.30	-0.76	2.13	-1.47	-1.21	5.28	-0.66	1.08	-0.16	0.71
POOL ELEVATION													
END OF MONTH	589.52	589.22	589.17	589.01	589.04	589.90	590.41	590.70	601.06	595.12	594.13	593.98	
MAXIMUM	590.29	589.52	589.43	589.17	589.19	589.90	590.41	590.87	601.44	601.06	595.12	594.52	
MINIMUM	589.52	589.18	589.15	588.92	588.94	589.04	589.90	590.17	590.68	595.12	594.13	593.96	
POOL CONTENT EOM (1000 AC.FT.)	389	385	385	383	383	393	399	402	535	456	444	442	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
STILLHOUSE HOLLOW LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	14	10	13	16	22	23	26	46	21	11	5	11	218
FY 1981	0	2	2	1	3	8	9	12	108	12	4	10	171
RELEASES (1000 AC,FT.)													
AVG 1968 THRU 1981	7	7	10	13	13	16	21	35	27	24	4	7	184
FY 1981	0	0	0	0	0	0	0	0	36	64	2	10	112
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.78	2.16	2.33	2.02	2.13	1.84	3.35	4.42	2.99	1.98	1.92	3.11	31.03
FY 1981	0.51	2.68	1.73	0.88	1.57	3.87	2.22	3.71	9.06	0.82	2.39	3.42	32.86
DEVIATION	-2.27	0.52	-0.60	-1.14	-0.56	2.03	-1.13	-0.71	6.07	-1.16	0.47	0.31	1.83
POOL ELEVATION													
END OF MONTH	616.67	616.75	616.87	616.87	617.14	618.14	619.25	620.74	630.73	622.73	622.57	622.15	
MAXIMUM	617.12	616.79	616.97	616.90	617.14	618.14	619.25	620.83	633.91	630.73	622.73	623.29	
MINIMUM	616.67	616.56	616.74	616.79	616.87	617.14	618.14	619.22	620.74	622.73	622.27	622.15	
POOL CONTENT EOM (1000 AC.FT.)	203	204	204	204	206	212	218	228	296	240	239	237	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
GEORGETOWN LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1980 THRU 1981	0	0	0	0	1	2	2	15	38	4	1	14	77
FY 1981	0	0	1	1	1	3	4	9	73	8	2	26	128
RELEASES (1000 AC,FT.)													
AVG 1980 THRU 1981	0	0	0	0	0	0	0	0	18	23	1	13	55
FY 1981	0	0	0	0	0	0	0	0	35	45	2	26	108
RAINFALL (INCHES)													
AVG 1931 THRU 1960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FY 1981	1.75	3.12	1.10	1.08	2.32	3.37	3.29	5.71	11.49	0.70	2.55	5.90	42.38
DEVIATION	1.75	3.12	1.10	1.08	2.32	3.37	3.29	5.71	11.49	0.70	2.55	5.90	42.38
POOL ELEVATION													
END OF MONTH	778.67	778.56	778.92	779.23	780.07	782.38	785.45	792.42	813.35	791.68	791.51	791.49	
MAXIMUM	779.12	778.67	778.92	779.23	780.07	782.38	785.45	792.42	819.44	813.35	791.60	806.11	
MINIMUM	778.67	778.39	778.56	778.92	779.22	780.07	782.38	785.45	792.42	791.34	791.18	791.03	
POOL CONTENT EOM (1000 AC.FT.)	24	23	24	24	25	27	30	39	76	38	38	38	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
GRANGER LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1980 THRU 1981	1	1	1	3	5	8	6	16	87	30	6	29	193
FY 1981	2	2	3	3	4	8	7	14	172	60	11	55	341
RELEASES (1000 AC,FT.)													
AVG 1980 THRU 1981	0	0	0	0	0	0	1	1	48	64	6	28	148
FY 1981	0	0	0	0	0	0	1	1	95	127	12	55	291
RAINFALL (INCHES)													
AVG 1931 THRU 1960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FY 1981	2.11	3.39	1.22	1.20	2.26	3.57	2.94	4.93	12.15	1.35	2.28	5.11	42.51
DEVIATION	2.11	3.39	1.22	1.20	2.26	3.57	2.94	4.93	12.15	1.35	2.28	5.11	42.51
POOL ELEVATION													
END OF MONTH	495.08	495.73	496.53	497.18	498.22	500.38	501.63	504.33	516.95	505.41	504.68	504.33	
MAXIMUM	495.10	495.73	496.53	497.18	498.22	500.38	501.63	504.51	522.25	516.95	505.47	508.73	
MINIMUM	494.65	495.08	495.73	496.53	497.18	498.22	500.38	501.63	504.30	504.78	504.68	503.95	
POOL CONTENT EOM (1000 AC.FT.)	35	37	39	41	44	51	56	67	142	72	69	70	

BRAZOS RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
SOMERVILLE LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1924 THRU 1981	12	14	17	22	24	19	29	37	22	12	3	10	221
FY 1981	1	2	0	3	2	3	3	12	7	10	1	3	47
RELEASES (1000 AC,FT.)													
AVG 1967 THRU 1981	12	10	15	10	19	17	23	32	33	22	5	5	203
FY 1981	0	0	0	0	0	0	1	0	19	11	2	0	33
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.66	3.10	3.15	2.89	2.87	2.44	3.71	3.95	3.43	2.35	2.45	3.09	36.09
FY 1981	2.02	3.05	0.72	2.38	1.74	2.67	9.57	5.36	9.96	2.40	1.72	1.76	43.35
DEVIATION	-0.64	-0.05	-2.43	-0.51	-1.13	0.23	5.86	1.41	6.53	0.05	-0.73	-1.33	7.26
POOL ELEVATION													
END OF MONTH	233.41	233.44	233.27	233.43	233.48	233.52	233.37	234.24	238.88	238.30	237.64	237.49	
MAXIMUM	233.67	233.50	233.52	233.46	233.57	233.68	233.56	234.38	240.07	238.92	238.30	237.87	
MINIMUM	233.35	233.23	233.27	233.17	233.38	233.46	233.25	233.28	234.23	238.28	237.42	237.47	
POOL CONTENT EOM (1000 AC.FT.)	113	113	111	113	113	114	112	120	170	164	156	154	

COLORADO RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TWIN BUTTES LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1963 THRU 1981	6	4	4	3	3	3	6	9	3	2	8	10	61
FY 1961	3	3	7	5	4	5	8	10	4	3	8	2	62
RELEASES (1000 AC.FT.)													
AVG 1963 THRU 1961	2	2	1	1	1	2	3	5	4	5	3	1	30
FY 1961	0	0	0	0	1	1	1	3	5	6	3	2	24
RAINFALL (INCHES)													
AVG 1931 THRU 1960	1.81	0.76	0.91	0.89	0.83	0.83	1.74	2.89	1.83	1.74	1.45	2.37	18.05
FY 1961	0.10	1.51	1.96	1.16	0.35	2.20	3.79	5.03	2.06	1.33	1.65	0.96	22.12
DEVIATION	-1.71	0.75	1.07	0.27	-0.48	1.37	2.05	2.14	0.23	-0.41	0.20	-1.41	4.07
POOL ELEVATION													
END OF MONTH	1921.85	1922.55	1924.16	1925.13	1925.55	1926.37	1927.13	1927.97	1927.27	1925.53	1923.40	1922.87	
MAXIMUM	1921.85	1922.55	1924.16	1925.13	1925.55	1926.39	1927.13	1927.97	1926.16	1927.27	1925.41	1923.47	
MINIMUM	1921.45	1921.86	1922.60	1924.19	1925.15	1925.67	1926.23	1927.13	1927.27	1925.53	1923.40	1922.87	
POOL CONTENT EOM (1000 AC.FT.)	74	76	82	86	88	91	95	99	96	87	79	76	

COLORADO RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
O.C.FISHER LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1915 THRU 1981	4	0	0	0	1	1	4	6	3	3	1	8	31
FY 1961	0	0	1	0	0	1	1	2	1	0	1	0	7
RELEASES (1000 AC.FT.)													
AVG 1953 THRU 1981	2	0	0	0	0	0	0	0	0	1	1	0	4
FY 1961	0	0	0	0	0	0	0	0	0	0	0	0	0
RAINFALL (INCHES)													
AVG 1931 THRU 1960	1.86	0.75	1.04	0.84	0.84	0.86	1.59	2.71	1.91	2.09	1.65	2.18	18.34
FY 1961	0.09	1.58	1.79	1.23	0.50	2.01	3.86	4.33	2.10	1.54	1.88	1.52	22.43
DEVIATION	-1.79	0.83	0.75	0.39	-0.34	1.15	2.27	1.62	0.19	-0.55	0.23	-0.66	4.09
POOL ELEVATION													
END OF MONTH	1884.99	1884.86	1884.95	1884.97	1884.96	1884.99	1885.25	1885.64	1885.42	1884.70	1884.33	1883.82	
MAXIMUM	1885.50	1884.99	1885.09	1885.02	1885.00	1885.26	1885.33	1885.65	1885.67	1885.49	1884.70	1884.42	
MINIMUM	1884.99	1884.61	1884.84	1884.94	1884.85	1884.96	1884.66	1884.91	1885.42	1884.70	1884.33	1883.82	
POOL CONTENT EOM (1000 AC.FT.)	34	34	34	34	34	34	35	35	35	33	32	31	

COLORADO RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
MORDS CREEK LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1942 THRU 1981	0	0	0	0	0	0	1	1	0	0	0	0	2
FY 1981	0	0	0	0	0	1	0	0	0	0	0	0	1
RELEASES (1000 AC.FT.)													
AVG 1953 THRU 1981	0	0	0	0	0	0	0	0	0	0	0	0	0
FY 1981	0	0	0	0	0	0	0	0	0	0	0	0	0
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.49	1.31	1.44	1.56	1.29	1.25	2.90	4.49	2.73	2.38	1.94	3.04	26.82
FY 1981	0.03	2.19	2.13	0.77	0.49	4.37	1.75	2.99	1.66	1.22	0.88	2.52	21.00
DEVIATION	-2.46	0.88	0.69	-0.79	-0.80	3.12	-1.15	-1.50	-1.07	-1.16	-1.06	-0.52	-5.82
POOL ELEVATION													
END OF MONTH	1886.07	1885.99	1886.40	1886.40	1886.32	1888.88	1888.73	1888.33	1887.76	1886.75	1885.85	1885.36	
MAXIMUM	1886.53	1886.07	1886.52	1886.45	1886.40	1890.04	1889.01	1888.73	1888.36	1887.76	1886.75	1886.04	
MINIMUM	1886.07	1885.90	1885.85	1886.36	1886.24	1886.32	1888.73	1883.33	1887.76	1886.75	1885.85	1885.36	
POOL CONTENT EOM (1000 AC.FT.)	3	3	3	3	3	4	4	4	4	3	3	3	

COLORADO RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
MARSHALL FORD													
INFLOWS (1000 AC.FT.)													
AVG 1941 THRU 1981	123	63	52	78	82	86	126	239	164	95	87	110	1305
FY 1981	29	14	16	15	13	50	54	33	196	52	21	18	511
RELEASES (1000 AC.FT.)													
AVG 1944 THRU 1981	34	32	25	25	28	35	50	89	87	65	57	40	567
FY 1981	0	0	0	0	0	0	0	0	18	0	133	88	239
RAINFALL (INCHES)													
AVG 1931 THRU 1960	2.39	1.46	1.42	1.13	1.18	1.27	2.46	3.27	2.50	2.02	2.03	2.76	23.89
FY 1981	1.13	2.36	1.53	0.93	1.01	3.56	2.94	3.51	5.53	2.59	2.47	2.23	29.79
DEVIATION	-1.26	0.90	0.11	-0.20	-0.17	2.29	0.48	0.24	3.03	0.57	0.44	-0.53	5.90
POOL ELEVATION													
END OF MONTH	680.33	680.44	680.44	680.24	680.44	680.71	680.33	678.85	683.31	679.75	674.83	671.88	
MAXIMUM	680.33	680.49	680.55	680.67	680.48	680.94	680.86	680.59	689.73	683.05	679.79	675.55	
MINIMUM	673.89	680.08	680.15	680.02	680.16	680.27	679.86	678.04	678.61	679.75	674.83	671.88	
POOL CONTENT EOM (1000 AC.FT.)	1159	1161	1161	1157	1161	1166	1159	1131	1216	1146	1059	1009	

GUADALUPE RIVER BASIN

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
CANYON LAKE													
INFLOWS (1000 AC.FT.)													
AVG 1915 THRU 1981	30	16	17	20	21	23	31	39	30	22	18	27	294
FY 1981	29	14	16	15	13	50	54	33	197	52	21	18	512
RELEASES (1000 AC.FT.)													
AVG 1964 THRU 1981	16	16	11	14	16	19	22	26	31	23	28	17	241
FY 1981	23	13	12	12	14	31	43	43	144	75	46	23	461
RAINFALL (INCHES)													
AVG 1931 THRU 1960	3.05	1.67	2.18	2.07	2.20	2.00	3.00	4.03	2.96	2.40	2.07	4.02	31.67
FY 1981	2.14	2.87	0.86	1.28	1.13	4.28	3.16	3.08	9.91	0.96	1.86	1.84	33.39
DEVIATION	-0.91	1.20	-1.32	-0.79	-1.07	2.28	0.18	-0.95	6.93	-1.44	-0.21	-2.18	1.72
POOL ELEVATION													
END OF MONTH	906.03	905.89	906.18	906.31	905.97	907.98	908.98	907.21	913.14	909.91	905.97	905.01	
MAXIMUM	907.07	906.03	906.25	906.33	906.43	907.99	909.07	908.98	919.20	913.94	909.91	905.97	
MINIMUM	905.36	905.59	905.90	906.10	905.96	905.95	907.32	907.20	907.10	909.91	905.97	904.92	
POOL CONTENT EOM (1000 AC.FT.)	358	357	359	360	356	374	382	367	417	390	358	350	

PLATORO DAM[1]

Inflows (1000 Ac. Ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Avg 19 thru 19								11.4	17.4	3.1	1.5	2.4	36.3
FY 1981	.5												
Releases (1000 Ac. Ft.)													
Avg 19 thru 19								11.5	17.2	3.1	1.6	2.4	36.2
FY 1981	.4												
Rainfall (Inches)													
Avg 19 thru 19								2.70	1.25	4.53	3.94	2.66	17.19
FY 1981	2.11												
Pool Elevation (EOM)	9982.40							9982.50	9982.60	9982.50	9982.40	9982.40	
Maximum	9982.50							9982.80	9982.80	9982.60	9982.50	9982.50	9982.80
Minimum	9982.40							9982.20	9982.10	9982.30	9982.40	9982.40	9982.10
Pool Content (EOM)													
(1000 Ac. Ft.)	19.7							19.8	19.8	19.8	19.7	19.7	

[1]Data for compiling averages unavailable

ABIQUIU DAM

Inflows (1000 Ac. Ft.)													
Avg 1962 thru 1981	8.9	15.7	18.2	6.3	6.6	15.0	45.2	91.2	45.8	21.6	22.9	14.6	312.0
FY	15.1	5.5	7.7	10.1	4.3	6.8	18.4	36.2	44.4	31.6	20.8	8.5	209.4
Releases													
Avg 1963 thru 1981	9.9	23.5	22.8	8.7	6.0	13.8	34.9	58.7	50.9	31.5	23.1	14.2	298.0
FY 1981	15.0	55.0	48.5	9.7	4.2	6.4	18.4	34.0	44.2	31.4	20.0	7.7	294.5
Rainfall (Inches)													
Avg 1957 thru 1981	.90	.57	.37	.34	.27	.52	.50	.69	.61	1.61	1.96	1.07	9.41
FY 1981	.51	.34	.09	.11	.05	.91	.43	1.22	.89	1.86	1.57	2.26	10.24
Pool elevation (EOM)	6202.00	6184.65	6164.48	6164.60	6164.40	6164.44	6163.76	6163.39	6162.80	6162.30	6162.19	6161.75	
Maximum	6202.30	6201.73	6184.00	6164.81	6164.66	6164.48	6164.70	6164.03	6163.40	6162.93	6162.75	6162.27	6202.30
Minimum	6202.00	6184.65	6164.48	6164.50	6164.40	6164.26	6163.76	6163.22	6162.50	6162.20	6161.91	6161.73	6161.73
Pool Content													
(1000 Ac. ft.)	132.3	81.7	40.3	40.5	40.2	40.0	39.1	38.6	37.6	36.8	36.7	36.0	

COCHITI LAKE

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg 1910 thru 1981	48.7	52.3	47.6	126.5	256.2	190.4	86.4	70.6	199.7	83.7	55.2	43.1	1260.4
FY 1981	29.1	72.0	84.7	48.8	35.4	40.3	34.3	49.1	55.3	44.9	39.4	25.2	558.5
Releases (1000 Ac. Ft.)													
Avg 1975 thru 1981	29.9	47.6	49.9	37.8	37.2	60.8	105.5	223.2	204.5	133.7	50.7	39.1	1019.9
FY 1981	28.4	71.6	83.8	49.5	34.0	39.9	34.8	48.0	54.1	44.4	38.4	24.6	551.5
Rainfall (Inches)													
Avg 1967 thru 1981	.96	.64	.59	.62	.29	.51	.48	.92	.75	1.90	2.51	1.47	116.40
FY 1981	.22	.34	.06	.10	.04	.57	.96	1.21	1.36	1.85	1.10	1.31	9.12
Pool Elevation (EOM)	5321.58	5321.68	5322.17	5321.50	5322.39	5322.28	5321.26	5321.50	5321.59	5321.20	5321.43	5321.47	
Maximum	5321.64	5322.48	5322.17	5321.94	5324.37	5323.32	5323.94	5322.17	5321.74	5322.09	5322.64	5322.10	5324.37
Minimum	5321.28	5321.18	5321.12	5321.40	5320.63	5321.09	5321.26	5321.30	5321.08	5321.20	5321.10	5321.38	5120.63
Pool Content (EOM) (1000 Ac. Ft.)	46.4	46.4	47.1	46.3	47.3	47.2	46.0	46.3	46.4	45.6	46.2	46.2	

CALISTEO DAM

Inflows (1000 Ac. Ft.)*													
Avg 1971 thru 1981													
FY 1981													
Releases													
Avg 1971 thru 1981	.34	.07	.07	.08	.11	.12	.19	.14	.14	1.63	1.02	.7	.4
FY 1981	0	0	0	0	0	0	0	1.0	1.2	1.2	1.5	1.0	5.9
Rainfall (Inches)													
Avg 1958 thru 1981	.82	.56	.26	.49	.37	.35	.51	1.03	.32	1.35	1.41	1.24	8.71
FY 1981	.11	.10	0	0	0	.49	.91	1.26	.49	.93	.11	.37	4.77
Pool elevation (EOM)**	Empty all year												
Maximum													
Minimum													
Pool Content (1000 Ac. ft.)	0	0	0	0	0	0	0	0	0	0	0	0	

*Inflow-Outflow
** Invert Elevation

JEMEZ CANYON DAM

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg 1953 thru 1981	1.9	1.9	1.4	1.5	1.7	3.5	12.5	10.6	2.4	1.1	3.0	1.0	42.5
FY 1981	.3	.9	1.4	1.4	1.1	1.3	6.7	4.0	.9	1.6	.5	1.5	21.6
Releases (1000 Ac. Ft.)													
Avg 1954 thru 1981	1.7	1.9	1.4	1.5	2.5	3.4	9.5	11.6	5.8	1.3	2.9	1.0	44.5
FY 1981	.1	.8	1.3	1.3	.8	.9	6.3	4.2	.9	1.4	.3	1.0	19.3
Rainfall (Inches)													
Avg 1953 thru 1981	.97	.43	.41	.40	.36	.47	.35	.73	.44	1.21	1.57	1.00	8.34
FY 1981	.04	.08	.20	0	.21	.26	.47	1.79	.44	2.68	1.23	.58	7.98
Pool Elevation (EOM)	5158.89	5159.02	5158.88	5158.86	5159.65	5160.82	5161.46	5160.32	5159.45	5159.49	5159.75	5159.97	
Maximum	5158.89	5159.12	5159.34	5159.29	5159.65	5160.82	5162.18	5162.87	5161.18	5161.53	5160.17	5162.06	5162.87
Minimum	5157.98	5158.95	5158.66	5158.78	5158.43	5159.66	5157.68	5160.32	5159.42	5159.17	5159.31	5159.67	5157.68
Pool Content (EOM) (1000 Ac. Ft.)	1.7	1.7	1.7	1.7	1.9	2.2	2.2	2.1	1.8	1.8	1.9	2.0	

SANTA ROSA

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg													
FY 1981	1.2	1.1	1.1	.9	.6	.6	.5	.8	.4	7.4	10.2	8.8	33.6
Releases													
Avg													
FY	.9	.9	.9	.7	.5	.4	.4	3.5	.4	7.4	10.2	.2	26.8
Rainfall (Inches)													
Avg 19 thru 19													
FY 1981	0	.48	0	.18	.08	.74	.46	.53	.85	2.43	8.68	1.07	15.5
Pool elevation (EOM)	4673.75	4674.77	4675.83	4676.84	4677.31	4677.99	4678.47	4644.65	Empty	Empty	4716.29	4720.99	
Maximum	4673.75	4674.77	4675.83	4676.84	4677.31	4677.99	4678.47	4678.57	Empty	Empty	4716.29	4721.10	4721.10
Minimum	4671.85	4673.77	4674.82	4675.84	4676.85	4677.29	4678.00	4644.65	Empty	Empty	Empty	4716.25	Empty
Pool Content (1000 Ac. ft.)	2.7	2.9	3.0	3.2	3.2	3.4	3.4	.5	0	0	28.8	36.6	

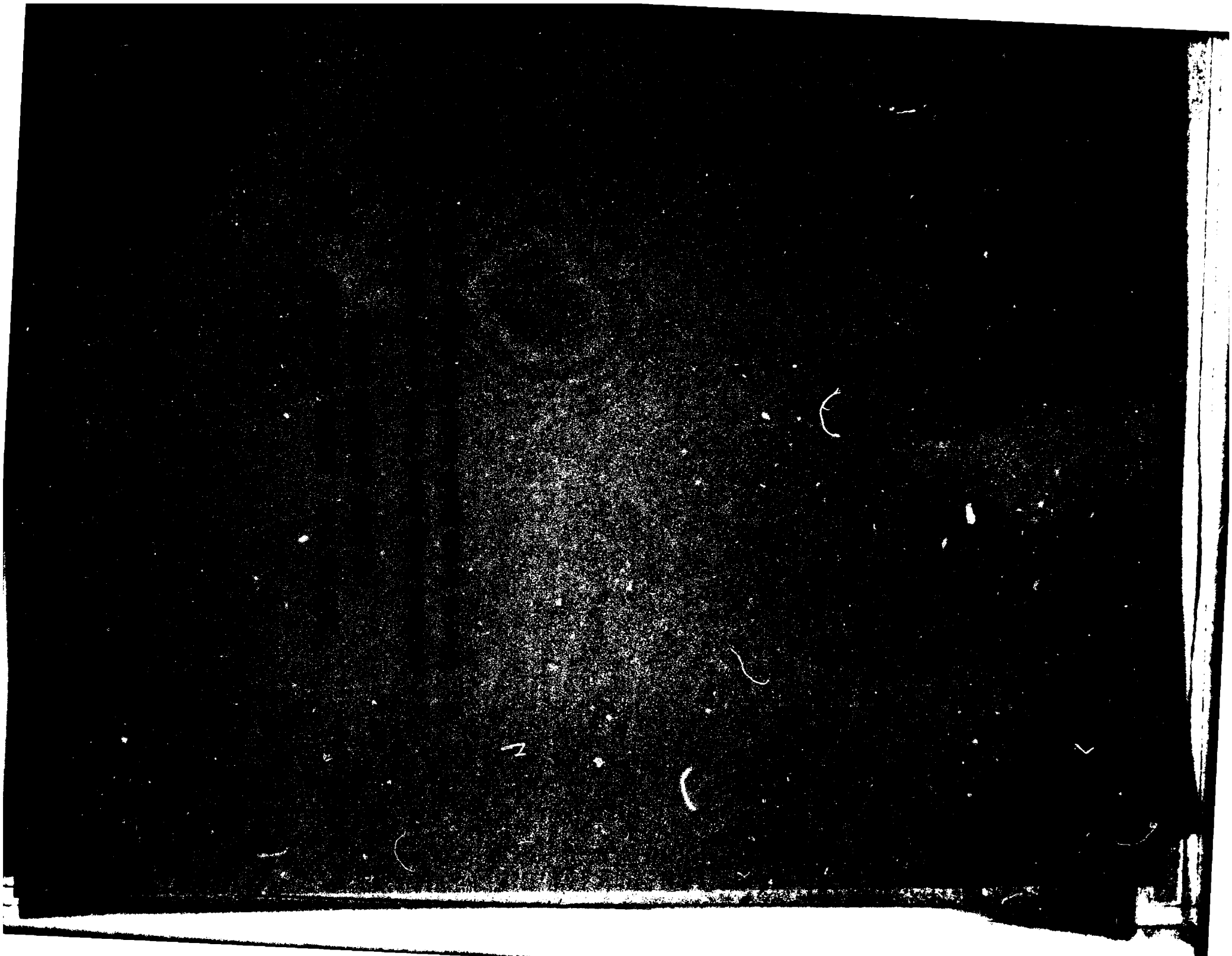
*Insufficient data for averages
reverse started in April 1981

Sumner Lake No data available

TWO RIVERS DAM

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Inflows (1000 Ac. Ft.)													
Avg 1964 thru 1981	.5	.6	.3	.4	.2	.2	.5	.6	.7	.6	1.2	1.8	4.9
FY	.2	0	0	0	0	0	0	0	0	.1	1.6	.7	2.6
Releases (1000 Ac. Ft.)*													
Avg 19 thru 19													
FY 19													
Rainfall (Inches)													
Avg 1975 thru 1981	.90	.19	.19	.22	.41	.29	.33	.68	1.33	1.94	2.89	2.18	11.49
FY 19	0	0	0	0	0	0	1.81	2.13	1.90	1.35	3.09	3.48	13.76
Pool Elevation (MSL)													
Maximum	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Minimum													Empty
Pool Content (MSL)													
(1000 Ac. Ft.)	0	0	0	0	0	0	0	0	0	0	0	0	

*Inflow-Outflow



MINUTES

Arkansas River Basin Coordinating Committee Meeting

7 April 1981

1. Welcome. Colonel Waldrop, Tulsa District welcomed the group to the meeting which was held in the Tulsa District office.

2. Introduction. Mr. R. Terry Coomes, Chairman of the committee, opened the meeting and introduced those in attendance. A list of the attendees is furnished on Inclosure 1. He stated that the theme of the meeting this year would focus on low flows. The flows at Van Buren have been below normal for the past 5 years. Water supply deliveries and diversions are up.

3. Review of 1980 Operations.

a. Below Fort Smith. Mr. James Proctor, Corps of Engineers, Little Rock District, reviewed the operations below Fort Smith. This verbal presentation summarized the details of the 1980 regulations which are presented in the "Arkansas River Basin Coordinating Committee Report on 1980 Activities".

b. Above Fort Smith. Mr. Ross Copley, Corps of Engineers, Tulsa District, reviewed the operation above Fort Smith. This verbal presentation summarized the details of the 1980 regulations which are presented in the "Arkansas River Basin Coordinating Committee Report on 1980 Activities".

4. Arkansas State Water Plan. Mr. Douglas E. Edwards, Arkansas Soil and Water Commission, reported on the state water plan. They are working on four phases of developing the plan, which includes gathering information, evaulating information, etc. They are dividing the plan into several areas instead of putting it all in one volume. The lower Mississippi area will be in one volume in which they will identify water problems, shortages, emerging problems such as salt water encroachment. It will also contain a surface and subsurface water budget. Are working with the U.S.G.S. in developing a ground water budget for some 12 areas. The Department of Agriculture is assisting in monitoring drawdown in wells in several counties in the eastern portion of the state.

The past legislature created a "Water Supply Commission" that is to last 2 years. It was formed by people representing all representative areas in the state. The present size is about 39.

5. Management of Water Quality Storage in Kansas. Mr. John A. Henderson, P.E., Kansas Water Resources Board presented a report on the Management of Water Quality in Kansas. The State of Kansas now has 24 major federal reservoirs within its borders. Nine of these 24 are in the Arkansas Basin drainage controlled by the Tulsa District, Corps of Engineers. Seven of the nine include water quality as a project function. Municipal and industrial water supply is a major function in seven of the nine, and the state has contracted for water supply storage in five. The seven reservoirs with water quality storage contain approximately 167,000 acre-feet of storage which will provide a yield of about 70 million gallons per day. The management of water quality is difficult with the problems which presently exist. These problems include drought, state water law, federal water policy and differences in interpretation. We are trying to manage the water quality storage to provide benefits over an extended period of time. In this effort, we coordinate with the other state agencies and with the Corps of Engineers to determine what releases should be made from the individual reservoirs, the quantity of flow required, and when the flow should be changed or terminated. This has worked well throughout the past winter and into early spring. However, as the growing season begins we anticipate problems will occur as irrigation systems are started up to provide for crops in the areas affected by drought.

6. Report on Drought Situation in Arkansas Basin. Mr. David Brown, Corps of Engineers, Southwestern Division presented a report on the drought situation in the basin. During the past 5-years the flows in the basin as measured at Van Buren have been below median and on a monthly basis there was only one month during the past year when flows exceeded median. Since July of 1980 the monthly flows have been below the lower quartile. So the flows are still extremely low. The projects in southern Kansas are low. Examples are Toronto 7%, Fall River 33%, Heyburn 44% and Hulah 43% of the conservation storage remaining.

He discussed the "Palmer Drought Index" which is an index of meteorological drought. This index is a basic indicator of the amount of not only soil moisture but also, groundwater, streamflow and lake storage. The recent National Weather Service "Weekly Weather and Crop Bulletin" shows "Palmer Drought Index" map that indicates moderate to extreme drought conditions in the Arkansas Basin. Indications are that it would require 8-10 inches of rain over most of the basin to restore the moisture conditions to normal.

7. Mississippi River Low Water and Impact on Navigation in Arkansas Basin. Messers Jim Proctor and Paul Revis, Corps of Engineers, Little Rock District presented a review of the lower end of the navigation system and the impact of the low flows on traffic. The major problems occurred in the White River reach of the navigation system because of low stages on the Mississippi River and low flows in the White River. This is the lowest reach where the system enters the Mississippi.

During design the White River low flow was considered to be about 8,400 cfs with a Mississippi River water surface at elevation 110.0 feet, m.s.l. at the mouth. This year the White River low flow was about 4,000 to 5,000 cfs with a Mississippi River elevation of 106.8. Navigation problems were experienced in October 1980 and continued, in some degree, through February 1981 as a result of the low stages and low White River flows. The lowest elevation at the mouth of the White River (106.8 ft) was experienced on 22-23 January 81. This was the lowest since the project was placed in operation in the late 60's.

Currently the traffic on the navigation system is about 9-10 million tons per year. This involves about 7200 barges per year or 1600 tow boats per year going through the first lock. One of the larger expenses in operating this reach of the system is dredging. The average amount of material that is being dredged out of the lower reach is close to the design amount. However, the design cost was about 30¢ per cubic yard and is now in the range of $1.00 per cubic yard, and higher during emergency situations.

8. Long Range Forecasts & Forecast for Arkansas Basin. Mr. Bill Curry, Acting Meterologist-in-Charge, National Weather Service, Oklahoma City presented discussion on long range forecasts. The Oklahoma City office issues 24-48 hour forecasts. The longer range forecasts are issued by the national meterological group in Washington. This group issues 3-5 day forecasts, 6-10 day forecasts, 30-day outlooks which are issued twice a month. They also issue a seasonal outlook four times a year. These long term outlooks are based on long term periods of record and also the collection of observations around the hemisphere. They keep track of migrating high and low pressure areas, temperatures and other data.

Information for the Palmer Drought Index is collected from 9 meterological districts by the Oklahoma City office. The rainfall and temperature measurements are collected and averages computed each Monday for each of the 9 districts. This information is then sent to Washington for use in updating the Palmer Drought Index. There is also another index called the Crop Moisture Index which reflects the moisture available to crops.

The long range forecasts still indicates that the high pressure system is forcing the major rain producing storms to the north of this area. There is the possibility that we will have another dry year.

9. Oklahoma Water Plan. Mr. Richard Cochran, Oklahoma Water Resources Board presented a slide show which discussed the development and contents of the Oklahoma Water Plan. This audio-visual presentation is outstanding and would be very suitable for use by various public organizations for learning about the plan.

10. Status of the Water Control Data System. Mr. John R. Parks, Corps of Engineers, SWD, reported that since the meeting last year the design documents and solicitation documents for the system have been completed and approved. The solicitation document was issued to the vendor community on 2 March 1981 with a closing date of 22 April for submission of proposals. The plans for installation of the automated data processing equipment portion of the system call for the installation of equipment at Dallas and Tulsa during FY 1981. The remainder of the sites would be installed during FY 1982.

The Tulsa District purchased 16 data collection platforms during 1980. These are to be delivered within the next few weeks. Installation is expected to be accomplished this spring and summer. There are not any funds for the purchase of platforms during 1981 fiscal year. The available funds for this year are being used for acquisition of the ADPE portion of the system.

11. Mechanical Problems at Webbers Falls and Ozark Powerplants. Mr. Edward Westmeyer, Corps of Engineers, SWD, presented a review of the mechanical problems which have been experienced at the Webbers Falls and Ozark project powerplants. He explained that in 1970 SWD had 15 powerplants, all vertical-axis units. About 1972 we began operating slant-axis turbines at the Webbers Falls and Ozark powerplants. The advantage over the vertical axis turbines is that the slant axis turbines do not require the excavation of a deep hole for a draft tube elbow. A disadvantage of slant axis turbines is that the rotating turbine parts are subject to fatigue failure because of fluctuating stresses caused by the force of gravity on the nearly horizontal turbine shaft. There are 5 of these slant-axis generators at Ozark and 3 at Webbers Falls. In about 1975 we began to notice some problems. The heads of the cap screws that hold the runner hub together were breaking off and the 5" studs holding the turbine shaft to the turbine wheel were cracking. These problems were solved and other problems developed. The latest problem involves cracks in the turbine shafts. Design work to solve this problem has been done and corrective actions have been initiated. It is expected that all of the units will be back in service by March 83.

a. Impact of Webbers Falls & Ozark outages on Southwestern Power Administration. Mr. Oscar E. Hembree Jr., Southwestern Power Administration (SWPA) discussed the impact of these outages on SWPA.

The three units at Webbers Falls and four of the five units at Ozark are out of service due to cracked shafts. SWPA has marketed 145 MW from the seven units presently out of service. Therefore, there will be a capacity deficiency in the system this summer and next summer. SWPA has taken the following steps to offset this loss of capacity

(1) Arrange for a transfer of up to 100 MW from the Western Power Administration.

(2) Hold the reservoirs higher than normal to provide more capacity from system projects.

(3) Fully utilize available capacity at all projects.

(4) Resolve operational problems at several projects by installation of capacitor banks and repairing equipment to prevent overheating.

These actions will help alleviate the problem until repairs can be made. The outage of the seven units has resulted in the loss of 60 million kwh of energy with a replacement cost of $1,200,000. Though the capacity loss of these units has been replaced with available reserves, if additional outages are experienced, this capacity may have to be replaced this summer at an estimated cost of approximately $200,000 per month.

12. Summary of Permit Activities. Mr. Lenard B. Young, Federal Energy Regulatory Commission, Ft. Worth presented a report summarizing the permit activities in the Arkansas-White-Red Basins. A copy of this report is attached as Inclosure 2.

ATTENDANCE LIST

ARKANSAS BASIN COORDINATING COMMITTEE MEETING

Tulsa, OK

7 April 1981

MEMBERS	AGENCY
R. Terry Coomes, Chairman	Corps of Engineers, SWD
Gerald L. Wright	Water & Power Resources Service
Lenard B. Young	Federal Energy Regulatory Comm., Ft. Worth
Robert P. Cantrell	Soil Conservation Service, Little Rock
Oscar E. Hembree, Jr.	Southwestern Power Administration, Tulsa
John A. Henderson	Kansas Water Resources Board, Topeka
Richard Cochran	Oklahoma Water Resources Board
Douglas E. Edwards	Arkansas Soil & Water Comm., Little Rock

OTHERS	
Charles H. Sullivan	Corps of Engineers, SWD
John R. Parks	Corps of Engineers, SWD
David R. Brown	Corps of Engineers, SWD
Edward Westmeyer	Corps of Engineers, SWD
James Proctor	Corps of Engineers, Little Rock
Paul N. Revis	Corps of Engineers, Little Rock
Colonel Waldrop	Corps of Engineers, Tulsa
Weldon M. Gamel	Corps of Engineers, Tulsa
Carroll Scoggins	Corps of Engineers, Tulsa
Ross Copley	Corps of Engineers, Tulsa
Guy L. Cabbiness	Corps of Engineers, Tulsa
Harold Chitwood	Corps of Engineers, Tulsa
Gene Jones	Corps of Engineers, Tulsa
David Kannady	Corps of Engineers, Tulsa
Loren Pope	Corps of Engineers, Tulsa
Susan Shook	Corps of Engineers, Tulsa
Mark Swift	Corps of Engineers, Tulsa
John R. Walker	Corps of Engineers, Tulsa
Eldon Beard	National Weather Service, Ok. City
Bill Curry	National Weather Service, Ok. City
Jack Bowman	National Weather Service, Tulsa Rv Forecast
Ed Lindsey	Southwestern Power Administration, Tulsa

Preliminary Permits

April 1981

Arkansas-White-Red Basins

Preliminary Permit Number	Status	Project	Applicant	Effective Date	Expiration Date
2908 [1]	Issued	L&D #3-Red River	Town of New Roads, LA	7- 1-80	6-30-83
2909 [1]	Issued	L&D #4-Red River	Town of Vidalia, LA	12- 1-79	11-30-82
2910 [1]	Issued	L&D #5-Red River	Town of Jonesboro, LA	6- 1-80	5-31-83
2949 [1]	Issued	L&D #1-Red River	City of Alexandria, LA	2- 1-80	1-31-83
2950 [1]	Issued	L&D #2-Red River	" " " "	2- 1-80	1-31-83
2999 [1]	Issued	Lake D'Arbonne-Bayou D'Arbonne	Cajun Electric Power Coop., Inc.	5- 1-80	4-30-83
3000 [1]	Issued	Columbia L&D-Ouachita River	" " " " "	5- 1-80	4-30-83
3001 [1]	Issued	Jonesville L&D-Black River	" " " " "	5- 1-80	4-30-83
3002 [1]	Issued	Caddo Lake Dam-Cypress Bayou	" " " " "	5- 1-80	4-30-82
3032 [1]	Issued	L&D #4-Arkansas River	Arkansas Electric Coop. Corp. & Riceland Elec. Coop., Inc. & C&L Electric Coop., Inc.	11- 1-80	10-31-82
3033 [1]	Issued	Dam #2-Arkansas River	" " " " "	9- 1-80	8-31-82
3034 [1]	Issued	L&D #3-Arkansas River	" " " " "	9- 1-80	8-31-83
3042	Issued	L&D #5-Arkansas River	" " " " "	11- 1-80	10-31-82
3043	Issued	L&D #13-Arkansas River	Arkansas Electric Coop. Corp. & Arkansas Valley Elec. Coop. Corp.	9- 1-80	8-31-82
3044	Issued	L&D #9-Arkansas River	" " " " "	11- 1-80	10-31-82
3045	Issued	David D. Terry-L&D #6-Arkansas R.	Arkansas Electric Coop. Corp. & Riceland Elec. Coop., Inc. & C&L Electric Coop., Inc.	11- 1-80	10-31-82
3081	Issued [2]	Chouteau-L&D #17-Arkansas R.	KAMO Electric Cooperative, Inc.	8- 1-80	7-31-82
3082	Issued [2]	Newt Graham-L&D #18-Arkansas R.	" " " "	8- 1-80	7-31-82
3083	Issued	Kaw Dam-Arkansas River	" " " "	8- 1-80	7-31-82
3084	Issued [2]	W. D. Mayo-L&D #14-Arkansas R.	" " " "	8- 1-80	7-31-82
3085	Issued [2]	Oologah Dam-Verdigris River	" " " "	8- 1-80	7-31-82
3098	Issued	Nimrod Lake-Fourche La Fave R.	Arkansas Electric Cooperative Corp.	9- 1-80	8-31-81
3099	Issued	Blue Mountain Lake-Petit Jean R.	" " " "	9- 1-80	8-31-81
3201	Issued	L&D #8-Arkansas River	City of Conway, Arkansas	11- 1-80	10-31-82
3275	Issued	John Redmond Dam-Grand (Neosho) R.	Kansas Electric Power Coop., Inc.	1- 1-81	6-30-82
3281	Issued	Ferrells Bridge Dam-Cypress Creek	Northeast Texas Electric Coop., Inc.	12- 1-80	11-30-81
3282	Issued	Wright Patman Dam-Sulphur River	" " " " "	12- 1-80	11-30-81
3325	Issued	John Martin Dam-Arkansas River	Continental Hydro Corporation	2- 1-81	7-31-82
3329	Pending	Altus Dam-N. Fork Red River	City of Altus, Oklahoma Continental Hydro Corporation	2- 1-81	1-31-83
3334	Issued	Clearwater Dam-Black River			

Preliminary Permit Number	Status	Project	Applicant	Effective Date	Expiration Date
3356[3/]	Pending	Wister Dam-Poteau River	Continental Hydro Corporation		
3372[3/]	Pending	Pine Creek Dam-Little River	" " "		
3392[3/]	Pending	Conchas Dam-Canadian River	Sequoia Energy Corporation		
3395	Issued	Hulah-Caney River	Continental Hydro Corporation	1- 1-81	6-30-82
3412	Issued	Oxford Dam-Arkansas River	City of Oxford, Kansas	12- 1-80	11-30-81
3432	Issued	DeQueen Lake-Rolling Fork River	City of Hope, Arkansas	3- 1-81	8-31-82
3433	Issued	Dierks Lake-Saline River	" " " "	3- 1-81	8-31-82
3434	Issued	Gillham Lake-Cossatot River	" " " "	3- 1-81	2-28-83
3435	Issued	Millwood Lake-Little River	" " " "	3- 1-81	2-28-83
3449	Issued	Murray L&D #7-Arkansas River	City of North Little Rock, Arkansas	3- 1-81	2-28-83
3553[3/]	Issued	Lowell-Spring River	Rauniker, Inc.	3- 1-81	8-31-82
3555[3/]	Pending	Hugo Lake-Kiamichi River	Ramel Corporation		
3578[3/]	Pending	Sanford Dam-Canadian River	Continental Hydro Corporation		
3657[3/]	Pending	Pine Creek Dam-Little River	Ramel Corporation		
3658[3/]	Pending	White River L&D #1-White River	" "		
3711[3/]	Pending	Pueblo Dam-Arkansas River	Mitchell Energy Co., Inc.		
3750[3/]	Pending	Hugo Lake-Kiamichi River	Western Farmers Electric Cooperative		
3811[3/]	Pending	Pueblo Dam-Arkansas River	Enagenics		
3819[3/]	Pending	Sugar Loaf Dam-Lk.Fk.Arkansas R.	"		
3829[3/]	Pending	Pine Creek Dam-Little River	Western Farmers Electric Cooperative		
3830[3/]	Pending	Wister Dam-Poteau River	" " " "		
3848[3/]	Pending	Sugar Loaf Dam-Lk.Fk.Arkansas R.	Continental Hydro Corporation		
3861[3/]	Pending	Pueblo Dam-Arkansas River	Harrison-Western Corporation		
3871[3/]	Pending	Hugo Lake-Kiamichi River	Oklahoma Renewable Resources, Inc.		
3982	Pending	Eagle Nest Dam-Cimarron Creek	City of Lamar, Colorado		
3983[3/]	Pending	Trinidad Dam-Purgatoire River	" " " "		
4015[3/]	Pending	White River L&D #2-White River	Arkansas Power & Light Company		
4016[3/]	Pending	White River L&D #3-White River	" " " " "		
4019[3/]	Pending	White River L&D #2-White River	Arkansas Electric Cooperative Corp.		
4020[3/]	Pending	White River L&D #3-White River	" " " "		
4118[3/]	Pending	Conchas Dam-Canadian River	City of Farmington, New Mexico		
4178[3/]	Pending	Hugo Lake-Kiamichi River	Enagenics		
4204[3/][1/]	Pending	White River L&D #1-White River	City of Batesville, Arkansas		
4236[3/][1/]	Pending	L&D #1(Norrell)-Arkansas River	Enagenics		
4292[3/]	Pending	Iron's Fork Dam-Iron's Fork Cr.	Arkansas Electric Cooperative Corp.		
4315[3/]	Pending	White River L&D's #2 & #3-White River	Independence County, Arkansas		

1/ Technically located in Lower Mississippi River Basin.
2/ Permit surrendered.
3/ Competing application.

AGENDA

Eleventh Annual Meeting
Trinity River Basin Water Management Interests

Date: 6 May 1981
Time: 9:30 a.m.
Place: Trinity River Authority of Texas
General Office

Topic

I. Introduction - Mr. Sam Aiken, Corps of Engineers, SWD

II. Welcome - Sam Scott, Trinity River Authority

III. Minutes and Comments on 1980 Meeting - Mr. Terry Coomes, Corps of Engineers, SWD

IV. Update on Status of Corps of Engineers Trinity River Projects - Galveston and Fort Worth Districts

V. Potential Hydroelectric Power Development at Ray Roberts Dam - Mr. Chris Hartung, City Manager, Denton, Texas

VI. Blending Red River Water in Lake Lavon - Mr. Carl Riehn, Executive Director, North Texas Municipal Water District

VII. USGS/Comsat General Pilot Program for Real Time Hydrologic Data - Mr. Ralph Ollman, Ft. Worth Subdistrict Office, U.S. Geological Survey

VIII. New Legislation for Funding Water Projects in Texas - Mr. Allen White, Assistant Director of Planning, Texas Department of Natural Resources

IX. Current Status, Richland-Chambers Reservoir Project - Mr. Bill Hilliard, Tarrant County Water Control and Improvement District No. 1

X. Long Range Weather Forecasting and Outlook for the Trinity River Basin - Mr. Daniel Smith, Chief, Scientific Services, NWS, Southern Region

XI. Water Quality Surveillance at Lake Livingston - Mr. Mike Knight, Water Quality Supervisor, Lake Livingston Project, TRA

XII. Comments and General Discussion - a. Municipalities b. Water Districts c. State Agencies d. Private Organizations e. Federal Agencies

XIII. Adjourn

ATTENDANCE LIST

TRINITY RIVER BASIN
WATER MANAGEMENT INTERESTS MEETING

TRINITY RIVER AUTHORITY GENERAL OFFICE
6 MAY 1981

Name	Organization
Bill Bailey	City of Arlington
Charles Bresett	City of Carrollton
Don Cline	" " "
Thomas Taylor	City of Dallas
Roger Proza	" " "
Chris Hartung	City of Denton
Lee C. Bradley, Jr.	City of Fort Worth
Jim Scanlan	" " " "
Larry Champagne	North Central Texas Council of Governments
John Promise	" " " " "
Carl W. Riehn	North Texas Municipal Water District
E. H. "Whitey" Ingram	" " " " "
J. Michael Millican	" " " " "
David Stephens	" " " " "
Bill Hilliard	Tarrant Co Water Control & Imp Dist No. 1
Allen White	Texas Department of Water Resources
Charles Gilliam	" " " " "
Frances Jo Pelley	Texoma Regional Planning Commission
Sam Scoll	Trinity River Authority
Mike Knight	" " "
Bill Holder	" " "
Dewayne Calum	" " "
Tom Newsom	Dallas Power and Light
Don Parvin	" " " "
Justin Johnson	Texas Electric Service Company
Bob Almond	Texas Power & Light Company
I. M. Rice	Trinity Improvement Association
Dick Berryhill	Espey, Huston
Jerry M. Nunn	National Weather Service
Daniel Smith	" " "
David Smith	" " "
Beade O. Northcut	Soil Conservation Service, Waco
Jimmy Hill	" " " Tyler
Ralph H. Ollman	US Geological Survey, Fort Worth
Martin R. Howland	Corps of Engineers, Galveston District
Cecil J. McFarland	" " " Fort Worth District
Tom Donaldson	" " " " " "
Sam Aiken	Corps of Engineers, Southwestern Division
Terry Coomes	" " " " "
Charles Sullivan	" " " " "
David Brown	" " " " "